Plane Talk

JANUARY · 1945

Starting the Mission

Good Neighbors at Natal · Fire Over Burma · How We Got Our Airpark

Planes for Tight Places · When Johnny Comes Flying Home · Our Greenland Outposts

Plane Talk

If you wish to share your copy of Plane Talk with a soldier in the war theatres, 1st class postage is required (15¢). You may re-use the envelope in which your copy comes to you by pasting on a label addressed to the APO number; seal the envelope. The magazine may be mailed, unsealed, to a U. S. A. address for 3¢

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Our Cover

Reproduced from a striking AAF kodachrome, this month's cover shows you how a Liberator at an airfield in Britain is given its go-ahead signal to taxi to the runway, for its take-off on a daylight mission over Germany.

Our Indebtedness

Often some of the most interesting material in Plane Talk *comes to us from men in the Army Air Forces and the Navy whom we can not thank in person. It is not the policy of the Services, for instance, to give personal credit to the photographers whose splendid work we are often privileged to reproduce here.*

Likewise, manuscripts are now being dispatched to us from the various fronts, sometimes direct and sometimes via Washington, often without indication that would permit us to give an author's credit line, which we like to do. "Fire Over Burma", on Page 13, was such a manuscript. Similarly, the fine photograph of a Liberator bombing strike reproduced on Pages 16-17 reached us from the 13th Air Force without our being able to say a direct Thank-you.

To our unknown reporters, then, the editors want to express appreciation, in their own behalf and in the name of Consolidated Vultee Aircraft Corporation.

P.R.O. Copies

Some of the Public Relations Officers in the Air Forces who have been of assistance to us receive Plane Talk *regularly. We shall be glad to send copies to any P.R.O. who requests them.*

When Johnny Comes Flying Home
Fred B. Barton, who has visited with our airmen from England around the world to China, tells you about Liberator men 1

Help Wanted
Consolidated Vultee has built over 30,000 planes since Pearl Harbor, its President reports, but workers are still needed 4

Our Greenland Outpost
Greenland represents, for America, one of the most important spots in the world today, and Martin Sheridan explains why 6

Until We Get to Berlin
Colonel Robert R. Gideon points up our air war over Europe by telling what we have accomplished and what still lies ahead 8

We Save Our Airmen
Captain John A. De Chant, USMC, tells how Catalinas are concerned with the fact that we're a pilot-crazy nation 10

Fire Over Burma
To bail out was almost suicide, to keep going seemed impossible, but two faltering engines were enough to get this Liberator home 13

How We Got Our Airpark
Some would call it an Airport—but Airpark is the modern term for this necessity which, says Lieutenant Brown, any town can have 14

Coming to Grips With the Japs
We are making enormous progress in gaining the Pacific air bases we need to destroy the enemy's resources for war-making 16

5 Old Faithfuls
The Liberator is a Pacific Ocean, says Sergeant Cunningham, who describes the beginnings of American airpower there 18

The British Use a One-Tailed Liberator
It is a modification that departs from the familiar silhouette, and British use of it is making news on the international airways 20

Packaging Planes and Their Parts
Shipment of new planes and spare parts to our global air forces requires highly specialized packaging to assure their safe arrival 21

They Shall Be Comforted
Sally MacDougall, of the New York *World-Telegram* staff, tells what happens when one of our airmen suffers grievous wounds 22

Good Neighbors at Natal
Brigadier General Greely reports his visit to one of the most important air bases which our nation has developed 25

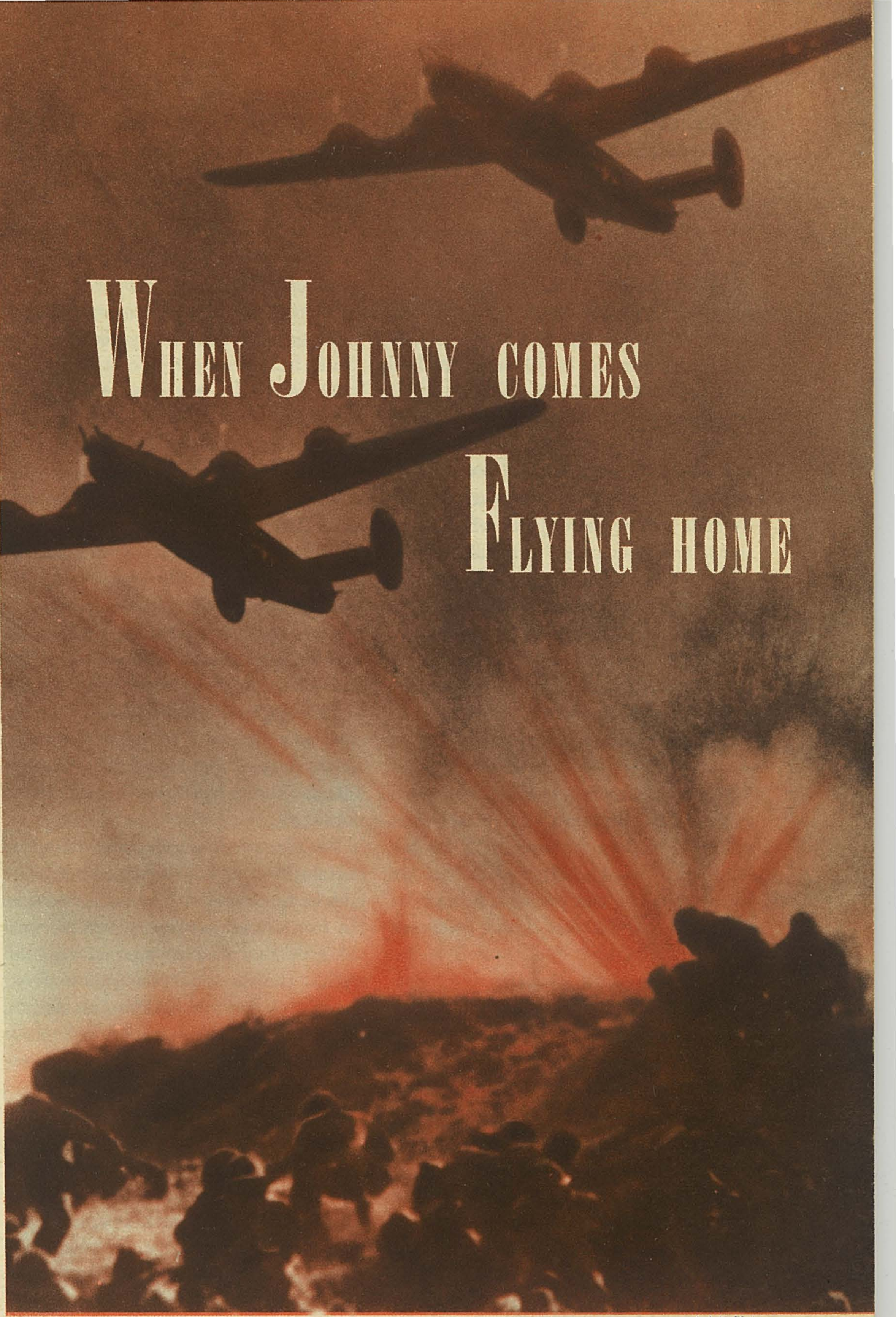
The New "Voyager 125"
It is a remarkable plane for personal use on which Stinson can begin production as soon as war-time restrictions are lifted 28

Planes for Tight Places
The Flying Jeep is almost insignificant in size, but it is doing one of the most exciting and useful jobs of the war 29

Speaking of Airpower
A great organization like Consolidated Vultee has occasion to do it millions of times a year—and this new system speeds the words 32

Edited by Hill and Knowlton for the Consolidated Vultee Aircraft Corporation and published every other month. Text and pictures have been cleared for publication with Government authorities. Text of any article contained in the magazine may be reprinted with or without credit to Plane Talk. Copies of most pictures, except those credited to commercial news agencies, can be made available to editors upon request. While manuscripts are not solicited, first hand accounts of experiences by men in the air forces at the fronts will be given careful consideration. All correspondence and address changes should be addressed to the office of Hill and Knowlton, Room 3301, 350 Fifth Avenue, New York 1, New York.

WITHDRAWN



A.A.F. Photo

WHEN JOHNNY COMES FLYING HOME

By Fred B. Barton

He will have some experiences behind him you can't pry into. Mr. Barton, who has been living with our airmen, tells why.

THE war is far from over, but it is not too soon for you to begin meeting the new kind of Liberator man who is coming home when his work is done.

In one sense all our airmen are Liberator men, no matter what plane they service or fly. For their daring has already freed America from the greatest military threat ever levelled against us.

When I left America in 1943 to visit with our airmen around the globe—as far as India and China—all our coasts were darkened, for fear of the enemy. When I returned for the 1944 Christmas—after flying most of the way around the world, usually in Liberators at 200 miles or so an hour—I found all our coastal cities blazing with lights. When Johnny comes home from the airforces, thank him for that.

You may possibly still feel robot bombs here. But the serious threat to America's security is over. And it was airpower in the hands of Johnny which freed us from it in such brief time. So thank him. But don't gush. Remember he's a man, now.

He is probably wearing a silver identification bracelet on his right wrist when you see him, and maybe a couple of new rings on his left hand. Tattooing too, perhaps.

If he's a member of a combat crew, he may have a studied nonchalance about his clothing, wearing leather flying-jacket and sun-goggles even to meals. Or again, needing his own self-respect, he may become fastidious as to hair and clothing, in a way to surprise you.

He has learned to keep his belongings in small space. A foot-locker and a few hangers, or maybe just a barracks-bag, hold his clothing and his treasures. Remember when he littered skates, baseball bats and spare clothing from hallway to attic? Not in the Army, he doesn't.

If he seems abrupt with servants it will be because he has acquired some of the British method of giving short and clear commands to his bearer. Even GI's have bearers throughout Cairo and India, and the bearers in turn have their coolies to wait on *them.* Then again, he may have grown understanding of servants, may be more sympathetic. Why try to generalize? Hardly a situation in the Army for which you cannot find sober proof that the reverse is true.

He may almost have forgotten how to read a newspaper. Overseas what few papers he has seen have often been three or four months old. He has skimmed the obituary and marriage columns, looking for familiar names, like any shipwrecked sailor.

As for news, he has matched his experience on the inside of world events with what gets printed, and may have lost faith in the accuracy and importance of daily papers. The weekly newsmagazines, on the other hand, may have gained in his esteem.

In Britain, and in the Far East, he has been driving on the left, but he doesn't like it. On official documents he has been typing the date in the British style: 10 February 1945. He has seen his name butchered from Jonathan W. Smith to J. Smith or even Smith, J.

He has lived for 18 to 30 months overseas under rationing and he accepts it, for he finds that Sergeant Jones who doesn't smoke but likes candy can make advantageous swaps with Corporal Smith who doesn't go for candy but likes two packs of cigarettes a day. But he never wants to stand in line for anything again. He has had to line up for meals, for rations, for pay, for inoculations, for inspections of every variety. Back home he'll use the telephone to demand delivery and a lot of service.

He may have become deaf to propaganda. He has been howled at, preached at, talked to through placards until he discounts every word of advice given him. He believes what he sees, not what he hears — judges men by what they do, not what they say.

WHEN it comes to profanity, Johnny uses a lot of four-letter Anglo-Saxon words, in true Shakespearean style. Most of today's war reporting doesn't show this. Our newspapers and magazines won't print it. But books are beginning to, and the outcome may be a whole new trend to earthiness in tomorrow's literature. Johnny is probably going to sit in critical judgment on the over-fine writing of authors overly-engaged with the niceties.

He is matter of fact. Though camp movies are his favorite pastime, he has been known to walk out on movies that indulge in excessive flag-waving. Nauseating, he says. He is bored and annoyed too at Hollywood's passion for jitterbugging scenes. Why portray America as a nation of neurasthenics, he argues?

Your American GI's abroad have learned to some extent to listen to music. They have heard good symphony programs, uninterrupted by commercial announcements, broadcast from BBC. They listen to good symphony transcripts from home, aired over their own camp radio. They find they can listen to good music and like it: the stuff is expressive and restful.

Johnny's passionate belief that things American are better than any other stuff anywhere in the world has given him occasion to scrutinize American swing music. Here again it is difficult to generalize — but I think he is growing tired of it.

Twice a year he has been herded into the recreation hall and shown a movie explaining the articles of war, including its privileges and its penalties in time of war. With that has come a required movie on sex hygiene. The stuff rather bores him, and he'd like to get back to managing his sex affairs in privacy. On the other hand, public instruction in prophylaxis has at least taught him how to manage, if he is teachable at all. Today's low venereal disease rate in our armed forces is the more remarkable when it is remembered that millions of Americans now circulate, for their first time, among peoples who regard sex as a major human pleasure having no moral connotations at all.

With doctors Johnny has acquired a new acquaintance; he has developed a sublime faith in the powers of preventive medicine. His own carcass has been punctured variously by inoculations against typhoid, typhus, cholera, smallpox, yellow fever, bubonic plague and lockjaw or tetanus. Booster shots in the first four of these are administered every six months, if he serves in India or China, and Chinese cholera and Chinese typhus are, even in their serums, things to be remembered.

Johnny may have been in areas infested with fleas, mosquitoes, lice and incidental vermin; with cockroaches almost big enough to saddle and mount. Most other nations accept vermin calmly, just as they accept dirty kitchen utensils. But Johnny has doused himself with body-powder, has sprayed the room with a pyrethrum spray that kills even hardy crickets. In nations where athlete's foot is an accepted circumstance, made worse by every American's insistence on wearing shoes, he has stayed reasonably pure, thanks to GI foot-powder. Thousands have fallen on Johnny's right hand and tens of thousands on his left; yet the perils of the dark ages have not come nigh him. If this sort of medical care is socialized medicine, he will not protest.

Still, Johnny is tired of being pushed around, and yearns to get into business for himself. Some of his friends have only vague ideas; others have thought it out. "I've spent 12 years in the soft drink business, and if I can make money for other people I think I can make it for myself. The new GI bill of rights will stake me to enough to get started on," a mess sergeant told me in Kandy, Ceylon. He plans a home-delivery service. Other GI's I've talked to plan to open shop as a public accountant, or do welding and tinkering, or repair bicycles, or make or invent or market plastics, or go back to school and study things like chemical engineering.

In clothes, you can look for tastes to run wild. Johnny has been in a situation where, to paraphrase Henry Ford in referring to the old Model T, he could wear any color as long as it was OD — olive drab. One sergeant of my acquaintance, back in China, prides himself on owning a robin's-egg-blue undershirt. He does not dare wear it on Saturday mornings for inspections; he once got gigged for that. But on other days it

A.A.F. Photo

Injured Liberator crewman returned from a bombing attack on German war-plant is being made comfortable by Medical Corpsmen.

gives him an individuality, a lift, a breath of life. Once back home every overseas lad may be expected to go for loud neckties, racetrack checks and hues of clothing that will rival Joseph's coat of many colors.

Your Johnny may have developed a mistrust of strangers because, in truth, the Army has encouraged him to think twice and then keep still. "I was talking when I should have listened" is a gentle piece of self-criticism you hear now and then.

The Army has its secret service, its espionage and counter-espionage, world without end. For instance: A U.S. soldier flying home on leave consented to take along some letters for a friend and mail them back in the States. When he got off the plane at Miami he was met by a secret service agent who knew exactly what he was carrying and *in which pocket he was carrying it.*

Again: a sergeant in Cairo met an agreeable stranger from his home state of New Jersey. Two days later the sergeant was called before his commanding officer. A crisp typed report listing his name revealed that he had told how many days his outfit had spent in arriving from home, where they were located, and the outfit's identity.

You learn to shut up. Perhaps the Army overstresses the unpleasant side of surveillance, understresses police work as protection for the innocent. Perhaps we are breeding a dislike for being policed. Or again, in a world where Britain is talking even now of continuing individual identity cards through peacetime, we are face to face with a world where the old-style freedom of movement and freedom of expression are things of the past. Johnny hasn't yet been told about that.

Johnny has an idea that, wherever you are and whatever you want, it can be arranged, provided, of course, that you have the money and that you ask no questions. In a world threatened by inflation commodities are often worth more than money in exchange.

There's a set-up known everywhere as the black market, and possibly Johnny has seen some of its workings. Black market prices for a fifth of Scotch run as high as $35 in Iceland and other places where GI's are located in quantity. In Colombo the captain of a U.S. merchantman told me that hotel rooms in town were only available through the black market at $10 a night. "If you get hold of a couple of bottles and want to take a friend ashore and have a time, there's the room," he said. In Kunming I was told you can buy not only "Parker 51" fountain-pens and cameras but even a U.S. motorcar on the black market.

These black markets may be one of tomorrow's huge unsolved problems, due to be even worse if rationing is administered on a basis of self-importance and rank when these soldiers get back home. Your GI's are not inclined to have much patience with the idea of doing without or standing in line, once this war is over.

Johnny will come home with a contradictory attitude toward personal belongings. Every month he goes to the camp PX — Post Exchange — and buys whatever he is permitted to buy: his month's ration. Never mind if he already has razor blades enough to last him a year, he'll probably buy more because that is his privilege. He hoards as a squirrel stows away nuts against a wintry day. And yet at times he will share his last bar of sweet chocolate with a friend, will give away clothing, will show rare generosity. Contradictory again.

In friendships he may have become either gregarious or selective; may indeed have found that his best friend is himself. This war's Army has been trained in so many different centers and been shuffled and re-shuffled so many times that Johnny has come not to expect close and lasting friendships. Damon and Pythias loyalty is fairly rare in this Army. But instead of one true-to-the-end friend your Johnny probably knows a couple of dozen men from all over the country whom he admires and respects and whom he hopes to see again at later times in his life.

WHAT kind of minds will these returning soldiers have?

You can't blame them for being a little conceited. There's "Togglin' Ed," of the 8th Air Force, proud of his prowess as leading bombardier of his squadron. A chap like "Togglin' Ed" lets loose, by toggling the small releasing switch, more power for destruction than any previous single individual of your acquaintance or mine. He has been a god of vengeance. And he knows it.

Think of the picture. You and your statesmen take a lad like Ed fresh from school. You tell him the world is sick and that he can cure it by bombing whole cities to hell. Civilizations that have grown up since the Dark Ages he is to harass and destroy with his fire and his bombs.

You can't blame these men for having kaleidoscopic minds. One minute they are heroes in their own eyes; the next they have blood on their souls. Rebuilding the world is not one of their plans. That may come later, but right now they want to get back home and start a family.

Some of them have given themselves self-training during the war, but the pressure has been against any organized program of study. Take Joe, for instance, a brilliant young pilot I knew back in England. Joe had everything: personality, charm, physique, insight, ability. He has the talents of an artist. I tried to introduce Joe to the British War Office, thinking perhaps he could toss off a recruiting poster and have the joy of achieving international fame while overseas. But he no longer could settle down to solid work.

You can hardly imagine how it is. The

world becomes a place of personal and painful memories, and every man double-stars certain spots of horror in his mental Baedeker. Life becomes huge and cold and terrifying. Friendship today, heartaches and empty cots beside you before this day next week.

Bremen doesn't seem to these bombing sons of ours as a city of homes and churches; it is rather the place where hot ack-ack shot down six planes. Cologne is only the city where they try to avoid the cathedral with their fire — not a spot hallowed in days before Nazi worship of power set out to destroy enemy churches.

AAF Photo

"Sweating her in" — a ground crew awaiting their Liberator's return with anxious eyes.

"You fly over Norway and you think how beautiful it is," a bombardier told me back in England. "Then suddenly the flak starts coming up to meet you. Then you quit thinking about beauty and concentrate on dropping your bombs on the target and escaping with your life."

Who are you and I to judge such men? We have taught them to kill, in defense of us. Will Nice Nellies wave the Pentateuch at them when they also take some of the other commandments lightly? What can a sheltered moralist know about the terror that looms at midday when you bomb an enemy target in a fragile and inflammable bombing-plane?

I was guest at an air-base and was quizzing some pilots across the supper-table about their religion. "When you are in danger and you whisper a prayer, what kind of a prayer do you say?" I asked.

One short-haired navigator across the table from me bellowed forth an answer. "You have no right to ask such a question," he said. "You have never been in that kind of danger yourself. What do you know about dying, and being torn into pieces by enemy flak? What do you know about religion at such a time? It is really none of your business."

I accepted the rebuke humbly. I hand it on to all who will listen. Let it apply to any query relating too deeply to our soldiers' inner life. A soldier is not to be pinned to a cork like a museum butterfly.

Our airmen left us as boys and will return as men out of a world we can't conceive. But they are still Americans, however life overseas has changed them. They still cling, for instance, to their inadequate under-clothing — the mis-named "athletic" underwear that makes Americans slaves everywhere to central heat — despite the Army issue of long and woolly stuff which they bury in their barracks-bags and never use. They are prodigal in their use of water, fuel and electric-light, feeling that is their prerogative as tax-payers and the sons of tax-payers.

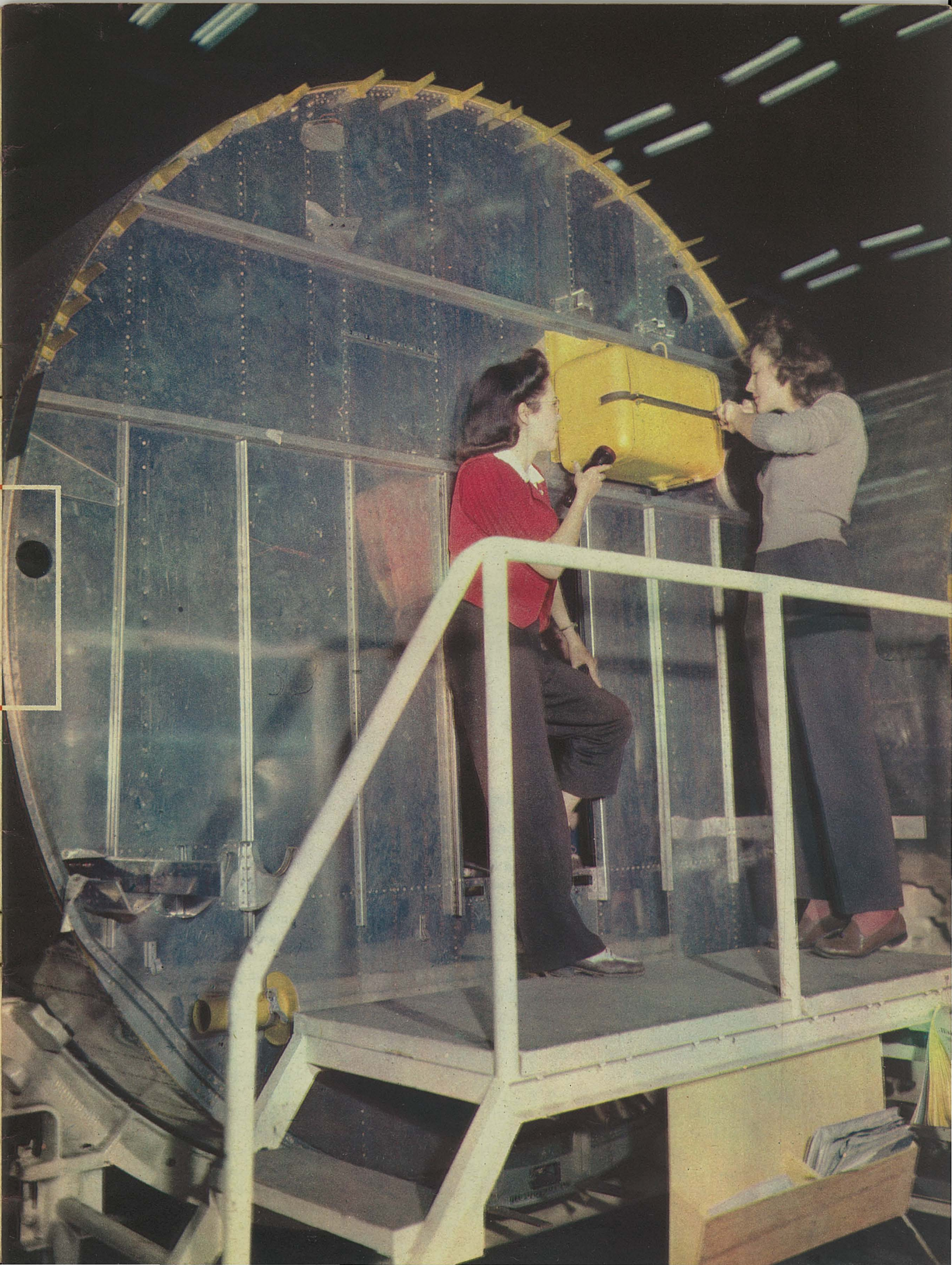
Yet overseas they have learned some bitter lessons about democracy and intend never to forget them. In some overseas theaters, for instance, Johnny has seen the best hotels and bars and nightclubs marked "out of bounds to other ranks," meaning other than officers. Johnny likes the old American way, where one man is as good as another, provided his conduct and his clothes are in keeping, as long as his money lasts.

HELP WANTED!

Consolidated Vultee, like most organizations with a huge backlog of orders from the Army and Navy, still needs workers. At right, you see some workers at the Ft. Worth plant laboring on a large new bomber. This January Harry Woodhead, Company President, announced the Company had built a total of 30,159 airplanes and equivalent spare parts since Pearl Harbor. The Company's 11 manufacturing divisions made 14 different types of aircraft during 1944. For a map of all 13 divisions, see p. 32.

He may reach home with a vast new respect for the engineering brains that created the Pyramids, and a lasting admiration for the delicacy breathed into marble to form the Taj Mahal. Yet I don't think you will find that Johnny comes back from this war with a broad international viewpoint.

Nor do these young men regard themselves historically. They somehow accept their fate as part of a huge social movement. Some of them grew up in such new ventures as CCC and NYA; they expect now to graduate into the alumni where the "GI bill of rights" takes them under its wing. As to who foots the bills, that is Father's worry. They have been used to worrying about other things than money, for a long, long time.



OUR *Greenland* OUTPOST

Above: PBYs anchored to loaded gas trucks in blizzard.
Below: Jeeps provide airmen with transport to the field.

U.S. Navy Photos

By Martin Sheridan

Why is Greenland of vital importance to us? Martin Sheridan, an accredited Navy War Correspondent, went up to see.

To America's vital bases in Greenland we owe much of our ability to put dominant airpower over Europe in such brief time.

Literally thousands of our planes have been flown across the Atlantic, with the crews well aware that they could land at one of the several bases in Greenland should the weather close in or any mechanical difficulties develop en route.

Greenland as a weather reporting station is even more valuable to us than as an air base. The Nazis attempted to organize their own weather stations in the Arctic long before the United States entered the conflict. They realized that whoever controls Greenland weather information would have the upper hand in any trans-Atlantic air war. Some of the Nazi installations were routed only in late 1944.

We got the Nazis out in time. But two years ago our own weather maps of this area were still woefully incomplete. Our planes were flying the North Atlantic only in summer. They had to be rerouted the long way around over southern seas in winter time. Today this has been remedied. It was Brigadier General Lawrence G. Fritz, A.T.C., who first proved, by flying a specially equipped Liberator into the worst weather fronts of this northland, that constant weather reconnaissance here could be made practical. Today he is Chief of the North Atlantic Division of A.T.C., and daily weather flights in this area are maintained as a matter of routine. The reports for the area covered by American planes are made complete for the whole Atlantic crossing when combined with reports from British planes doing reconnaissance from British bases.

To serve with an Air Force weather detachment on the east coast, or on the great ice cap that covers 85 per cent of Greenland, is the most isolated Army work possible. Every man is a volunteer especially chosen for his adaptability to complete isolation, for his qualities of initiative, and for his physical condition. The medicos prefer men who already have had appendectomies, because the small groups do not have doctors, and it is difficult to bring in one in winter.

"Everyone has been picked so carefully," explained Major Robert B. Sykes, Jr., district weather control officer for the entire island, "that we've never had a serious personnel problem. And many isolated groups consist entirely of a few enlisted men with only a sergeant in charge."

Major Sykes arrived with the original task forces in the summer of 1941 and planned much of the weather program. His men live in prefabricated wooden buildings whose roofs have been trussed and strengthened with guys.

Some stations are isolated for 10 months each year. Pack ice sweeps down the coast and bottles up the fjords as early as October. Bergs longer than city blocks combine with old ice and new winter ice to bar even the most powerful Coast Guard ice breakers. Late in July or August, when the ice finally breaks up, new groups of men and supplies for the year are brought in.

Coast Guard and Army planes drop mail to the lonely weather detachments whenever conditions are favorable. One time a bomb bay was loaded with such peaceful goods as packages of frozen beef, vegetables, strawberries and sacks of mail, and dropped them by parachute. The weather men recovered everything dropped. Two days later they radioed that one man in their group had broken out with a rash thought to be scarlet fever.

The group had not had personal contact with the outside world for five months. Hence the base surgeon decided that the condition was caused by strawberries. He advised the detachment not to worry and to sit tight. A later message from the outpost confirmed his deduction.

THE first sea arm to operate in Greenland waters was the Greenland Patrol, inaugurated in 1941 by Coast Guard Admiral Ed "Iceberg" Smith to convoy men and supplies to our new bases and to combat Nazi subs. Today military control of all the bases rests with the Army, while the Greenland Patrol under Coast Guard command provides ships for special Army missions, for escort work, for cooperation with the Greenland Administration and our own consular service.

Attached to the Patrol is a squadron of Navy-owned, Coast Guard-manned PBY-Catalina planes. These provide air coverage for convoys, conduct anti-submarine patrols, deliver mail to outposts, search for fliers and ships in distress, and report on ice conditions at sea.

Unpredictable weather with sudden changes, hazardous icing conditions and the rugged terrain are the greatest hazards of flying in Greenland.

Stocky, jovial Commander D. D. MacDiarmid, USCG, of Clifton, Mass., the squadron commander, says the PBY squadron flies only in daylight. This, the skipper explains, is to preclude accidents among the jagged peaks surrounding the field. "And before we take off on a routine flight," he went on, "we must be certain of being able to land again right here because the alternate strips are hundreds of miles distant, and an emergency landing in Greenland is a crash landing — with the emphasis on the crash."

These amphibian Catalinas carry crews of two officers and seven men. They are berthed and repaired outdoors, lashed to steel runway matting in all kinds of weather — snow, 30 below zero temperatures and strong winds. When the winds zip down from the ice cap in gusts ranging from 85 to 150 miles an hour, crewmen anchor the PBYs to loaded gasoline trucks and tractors. "Last year three planes were ripped apart by the winds," Commander MacDiarmid said. "But we haven't had any damage this year," and here he rapped his knuckles on his desk.

Gasoline pre-heaters thaw out the plane engines an hour or two before the scheduled take-off. These pre-heaters must be pre-heated themselves before their gasoline engines will operate. By leading a canvas duct from the pre-heater to a cover over the engine cowling, and also into the cabin, ground crews have been able to get the PBYs in the air in any Arctic temperature.

Although the planes have gasoline heaters in the cabin and cockpit, the inside temperature often averages from zero to 15 below during winter flights. Everyone wears two suits of 100 per cent wool underwear, two pairs of light socks plus one pair of heavy woolen socks, pile-lined trousers, a woolen shirt, one or two sweaters, a fleece-lined jacket, fleece-lined helmet, fleece-lined gloves, fleece-lined flying boots and a fleece-lined winter flying suit. Even Frank Sinatra would resemble a broad-shouldered giant in those clothes. Dressed for winter flying, the pilot has difficulty in squeezing into his seat and usually ends a day-long patrol completely chilled and with icy feet.

Flying in Greenland, the incubator of North Atlantic weather, the rugged PBYs can ice-up to the danger point in a matter of minutes. Pilots attempt to stay out of the clouds as much as possible. But frequently they encounter icing on the wings and fuselage when the atmosphere is perfectly clear with no visible moisture present.

Sitting in the comfort of Commodore Rose's dining room, Commander MacDiarmid told me about his crossing of Davis Strait on the previous day with a full crew and cargo of mail. His PBY began to ice up so quickly that he was barely able to keep it 200 feet above the turbulent 30-degree water, though using maximum engine revolutions.

"None of us was particularly happy about our plight," the skipper grinned. "For landings in Arctic waters are disastrous, heavy ice forming instantaneously on the hull. There wasn't a thing we could do. The plane continued to settle lower and lower until our antenna was dragging through the slush ice. Fortunately for us, however, we hit a slightly warmer air current and the deadly ice began to slough off."

Had the crew been faced with a possible crash-landing on the Greenland coast or the ice-cap, instead of the sea, they would not have felt so concerned. For then they would have been bait for the Army Air Force's crack 1st Arctic Search and Rescue Squadron, unofficially known as "The Find-'em and Feed'em Boys." The Squadron's record of rescues is so far perfect — every flier who has survived an emergency landing on the ice has been brought out alive.

Meanwhile, the Squadron's air echelon will locate the grounded men and then drop colored parachutes with kits including radios, stoves, axes, clothing, rations, sunglasses and other articles necessary for survival.

Coming back from Greenland, you bring not only the memory of brave men, but the conviction that you have seen a new Arctic history in the making.

The author, at right, talking with Commodore Earl G. Rose, USCG, the Commanding Officer.

U.S. Navy Photo

UNTIL WE GET TO BERLIN

By
Colonel Robert R. Gideon

From this point on, ground forces carry the brunt of the war; tactical bombing is of paramount importance.

I AM not a literary man, so I can spin you no epic tales about the war. This is just the talk of a professional soldier to neighbors at home.

When I was graduated from West Point in 1939, many did not think too much of professional soldiers. When I went into the air forces in '41, many did not think much about the usefulness of air power. That seems changed now. War has educated us.

When I got home from the European front in December and the news of Germany's great counter attack began breaking, some of my countrymen seemed in real despair. I can only say this — the German strategy will prolong the war, which is just what the Germans want. It will magnify the war's cost to us. We shall not win cheaply, as some Americans had hoped. But — we shall still win.

The setbacks we suffered at the end of 1944 mean primarily that we shall have to do some of our work over again.

The work of our air forces in the year previous to December headed up to three strategic accomplishments.

For one thing, we mastered the Luftwaffe; by April last year our 8th and 15th air forces had flattened many of the enemy's aircraft plants, and reduced fighter opposition. In my own outfit, the 15th, Liberators have played a great part.

One outcome was that our ground forces could invade the continent in June without being decimated from the air — the first successful invasion across the Channel in history. German prisoners of war would tell us, "When we were in Russia they said our planes were in the west. Here they told us our planes were over Russia."

Second, we carried on the campaign heralded by the famous Liberator raid on Ploesti. We bombed the enemy's rich oil resources in Rumania and Poland.

Result: the Germans promptly faced fuel shortages for a mechanized war — shortages which have not prevented their counter-attack, but have certainly handicapped them.

We also bombed plants making hydrogen peroxide. This, combined with potassium permanganate, is one of the fuels for the German robot bombs.

Finally, we hit hard at enemy lines of communication. As our own ground forces moved toward Germany, we have tried to hinder German supplies. For instance, in one day near the year end — on December 11 — we poured 6,000 tons of bombs on German railway centers. The Fifteenth Air Force flew up from out of Italy, and the Eighth out of Britain. They put some 1,600 of our heavy bombers in the air over Germany on one day. With fighter escort, that meant a flying army of more than

Left: Liberators flying under fighter cover of P-38's on strategic bombing mission to destroy Germany's oil resources in Poland.

17,000 Americans in the air over Germany at one time.

Here are official AAF figures on the tonnage of bombs dropped on some of the greatest German centers in the period between December 7, 1941, and December 7, 1944:

CITY	TARGET	TONNAGE
BERLIN	general war supplies, traffic center	13,717 tons
PLOESTI	oil	13,098 tons
MUNICH	aircraft, chemicals	12,937 tons
VIENNA	general war supplies, traffic center	11,671 tons
MERSEBERG	synthetic oil	11,391 tons
COLOGNE	general war industries, traffic center	11,236 tons
HAMM	traffic, supply, power center	10,105 tons
BRUNSWICK	aircraft plants, steel works, etc.	9,431 tons
KASSEL	aircraft plants, locomotives, marshalling yards	8,656 tons
HAMBURG	oil, shipbuilding, aircraft	8,481 tons
LUDWIGSHAVEN	chemical, engineering, AFV, etc.	8,264 tons
KIEL	principal German naval base, etc.	7,662 tons
BUDAPEST	aircraft, supply, traffic center	7,007 tons
FRANKFURT	aircraft, motor vehicles, chemicals, etc.	6,642 tons
SAARBRUCKEN	coal fields, iron and steel supplies	6,476 tons
MUENSTER	industries, inland harbor, canals	4,741 tons
HANOVER	rubber, ordnance, oil refineries	4,697 tons
BUCHAREST	supply center Eastern front	4,403 tons
OSNABRUCK	iron, steel mills, railroad junction	4,357 tons
WILHELMSHAVEN	naval base, U-boat pen, etc.	4,130 tons

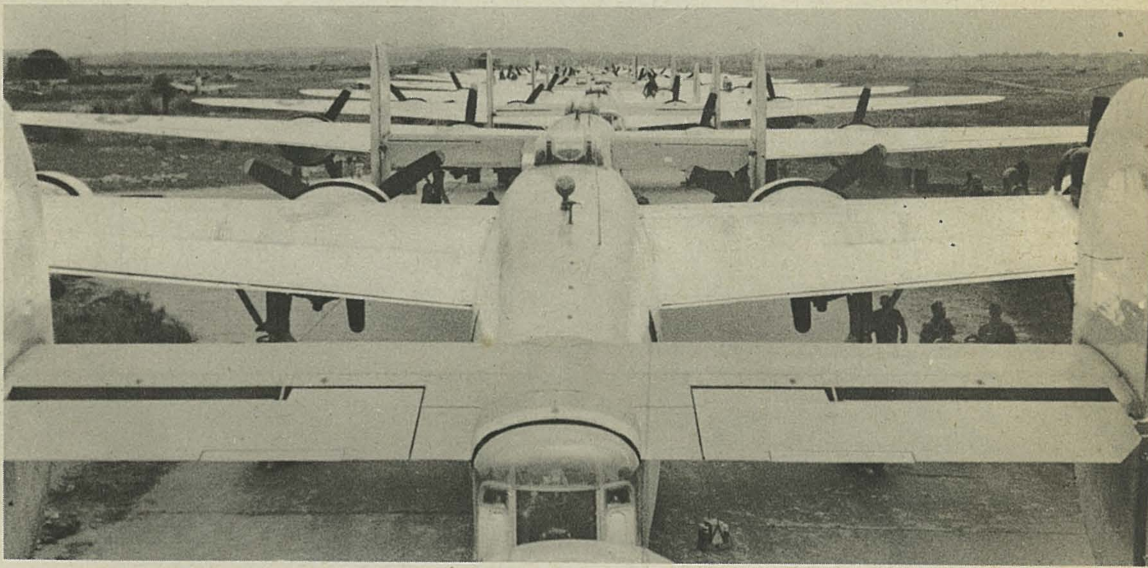
All this represents what we call *strategic* bombing. You doubtless know the distinction: strategy wins wars; tactics wins battles.

From the time of the invasion, our air forces have done more and more tactical bombing in support of our ground troops. Whereas a strategic target may be an aircraft factory or an oil refinery, typical tactical targets are gun positions, bridges close to the front line, troop concentrations, staff headquarters, armored vehicle concentrations, and the like.

During the invasion, for instance, our tactical bombing was done on precise schedule. We would have fifteen minutes to bomb an exact target; then our ground forces would move in as we stopped. We would "take turns." Heavy bombers like the Liberators would knock out whole areas of approaches, from great heights. Then medium bombers would take over at medium altitudes. Then the fighters would move in, strafing and dive-bombing.

Similarly, when the Germans counter attacked at the end of 1944, our air men supported the ground troops by tactical bombing of this same kind, directed against the enemy's movements and positions. Our planes also rushed up ammunition and supplies to our ground troops, often dropping them from the air.

As the war proceeds from here on, tactical bombing will be of paramount importance. For our ground forces will doubtless be carrying the brunt of the attack, and it will be the business of our planes to lend them all support possible.



AAF Photo

Liberators of 15th Air Force lined up at airdrome in France to unload cargoes of bombs and gas, ferried there to permit tactical air force to continue pounding Hun troops and positions.

When the day comes — and it will — that we break across the Rhine and burst through the Siegfried line into the heart of Germany, such tactical bombing will doubtless continue to be vital right up to the gates of the enemy's capital.

This is a bad winter in Europe — some say the worst in a hundred years. That weather is one of the breaks that have gone against us. The Germans made their counter attack at a selected time when weather limited the effectiveness of our air power, and the longest nights of the year helped greatly in shielding their operations.

Meanwhile, in heroic measures — such as attempts to rebuild the Luftwaffe by conducting plane construction in underground factories — the Germans have shown the courage of desperation. Their renewed offensive in middle December, during which they brought out new airpower, illustrates this.

The fight is bound to be costly, bloody and — on the enemy's side — merciless. As General H. H. Arnold has said, "I don't think the war in Germany will end until we actually get to Berlin." Perhaps guerrilla warfare will continue even long afterward.

Statistical summaries of bombs dropped cannot picture in any clear way the attack the Germans have been withstanding. What the enemy is experiencing must indeed challenge any average American to imagine.

Yet even this unparalleled attack has still not reached its goal — Unconditional Surrender.

As we continue on to our objective, Americans who feel that the war is a long way off might remember this: it is only an overnight's plane ride. That is, the siege of Germany is no farther off in point of time than was, say, the siege of Vicksburg from Washington some eighty years ago.

I left the war theater, for instance, one Saturday in December, on special assignment, and was in Washington the next morning.

The Christmas lights of my homeland looked good to me. I am not one of those who say our people don't know there's a war on.

To keep the actual war away from the shores of our homeland — away from our own cities — was one of the first objectives of all our military strategy. So it is good to see our homelights burning.

We Save our AIRMEN

By Capt. John A. De Chant, USMC

AMERICA is a pilot-crazy nation . . . in a very savvy way.

No other nation at war has devoted such painstaking effort to solving the innumerable problems of pilot-safety in all the theaters of this global war. Our humane concern for the lives and safety of our combat pilots and aircrewmen has paid off lavishly, not only in the thousands of lives saved but, almost paradoxically, in sparking up the natural audacity of our airmen in combat.

There was a time, early in the war, when pilots were high on the list of expendables. They fought with what little they had against vicious odds. In the high tradition of the services, many individual pilots sacrificed themselves deliberately to save a greater number of men.

Above: Riggers and packers in the parachute loft of the South Pacific Combat Air Transport, as painted by Sgt. Paul T. Arlt, USMC.

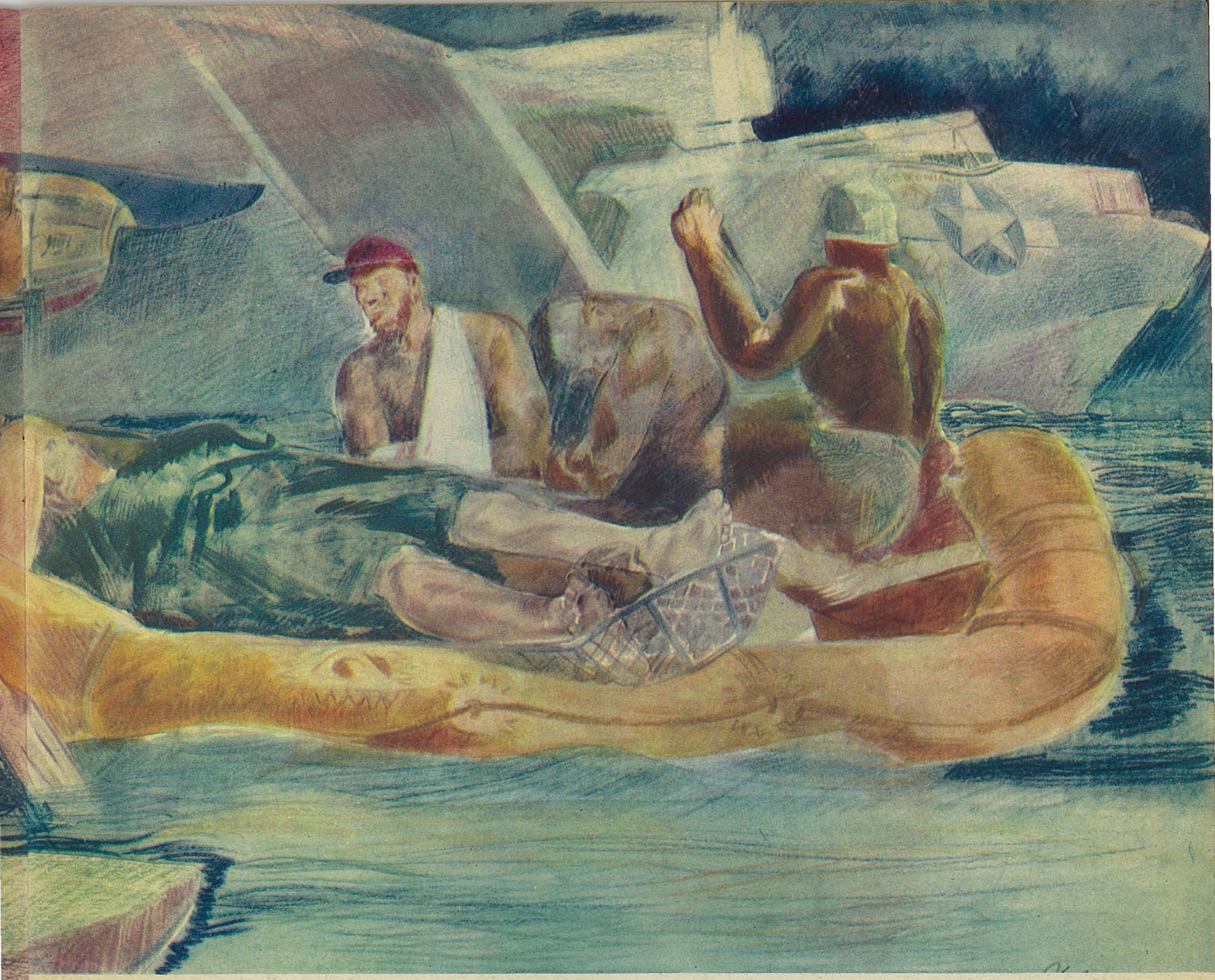
An immortal hero in naval aviation is the lieutenant who was returning to his carrier after hitting the enemy in the Central Pacific. Long after dusk he was still on a course that would bring him down aboard his ship. Then he noticed a flight of Japanese torpedo bombers which were using his plane as a homing pigeon, to lead them through the dark to the carrier. Radioing his situation, the Navy pilot ignored his almost empty fuel tanks. With a quiet goodbye, he turned his plane away toward the open sea . . . and certain death. The Japs followed, and never found our task force.

That happened less than a year ago. It was a military necessity then. A carrier could not be spared in those crucial days.

Witness the sharp contrast between that and what Admiral Mitscher did in the recent battle of the Eastern Philippines.

During the bitter sea fight, more than two hundred planes were still over their targets at dusk. They stayed until they had finished their jobs. To those brave pilots, the problem of finding their blacked-out carriers was secondary. Admiral Mitscher felt otherwise.

In spite of the possible presence of enemy submarines and the imminent danger of attack from scores of Jap land-based torpedo planes, the Admiral thumbed his nose at the menace. He had to save those airmen. By his order, the carriers in the area lit all their deck lights, used star shells,



Above: Capt. G. M. Harding, USMC, shows a Catalina in the Pacific rescuing a stricken airman.

and flooded the inky skies with searchlights to beacon in the pilots. Gas shortage forced many pilots to land on other carriers than their own, overloading the decks. Some cracked up, holding up those still in the air.

The situation was met again. The deck handlers were ordered to push plane after plane over the side to make room for those who had to land. The many pilots who landed in the water were picked up by destroyers that swept the seas with searchlights until they found the survivors. For those missed that night, the task force returned to the danger spot the next day.

Is it any wonder that the carrier airmen

Left: Sgt. Paul T. Arlt, USMC, paints the workers in the Flotation Gear Shop, where life rafts and Mae West life belts are always kept in condition for the water landings that are an ever-present Pacific hazard to airmen.

swear they'll fly into the mouth of hell for that pilot-crazy Admiral?

That is only one incident in the full story of pilot-safety and sea-air rescue services that the armed forces carry out daily.

The air services from the first have insisted that pilot-safety predominate in building combat planes, and that these planes, in addition, must equal or better those of the enemy in performance. This safety requirement complicated production, and made the planes less maneuverable than the Zero. But it has paid off in statistics.

Nor have we relied for safety on mechanical improvements. The personal training and gear which we give our pilots and crewmen are just as important. They have been incessantly drilled in the art of ditching their planes. Ingenious rafts of all sizes are accessibly stored aboard all planes. The fighter pilots carry theirs on their backs. With the rafts go even more ingenious gadgets that help the airmen return from enemy territory or hidden sealanes in good health.

The triptych of safe return that the fighter pilot carries on his own back are the parachute, jungle kit and life raft. Totaling the three of them, the pilot who bails out has more than 60 items to use for his personal health and safety. They run the gamut — tricky signal mirrors, canned water, food, flares, water dyes, fishhooks, medical supplies, and paddles. Add to all this his personal armament of pistol and knife — and the pilot is good for many moons at sea or in enemy-held jungle.

Staff Sergeant Bill Coffeen, USMC, used all that God and the Marine Corps gave him after he bailed out of his fighter plane deep in enemy territory in the Central Solomons. It took him 72 days, but he got back.

Sharks and Zeros to the contrary, Mike Vorachek, turret gunner in a Marine torpedo bomber, lived eleven days in his raft within paddling distance of Jap-held New Britain before he was filched from the sea by a Dumbo mission. But his experience was not nearly as terrifying as the eight days that Lieutenant David Scott spent in his one-man raft just outside the bustling Jap harbor at Rabaul, the biggest enemy base in the South Pacific. After his nightmare of numerous inspections by Jap planes and frequent fist fights with sharks, Scott, too, was rescued by Dumbo and brought back to safety.

The Dumbo rescue missions, usually flown in the "Ruptured Duck" — as some pilots call the Catalina PBY — have been rightfully called the airman's biggest morale builder in the Pacific. These planes have saved at least 1,400 men from death or a Jap prison camp in the Solomon Islands alone.

Nowadays the mad-hatter Dumbo pilots no longer sit at a rear base waiting for a rescue call. They fly right along with the fighters and bombers on their missions. Airborne, just a few miles from the target area, they wait a call from flak victims. Then, using their fighter cover to batten down Jap hatches, the fabulous Dumbos go clucking into the hot spot to pick up their loads.

Each day brings some new device into action to play its part in this shrewd and humane American mania — to save pilots. It may be a bomber dropping a huge "mercy" boat into the roaring North Atlantic, or a casual helicopter lowering its ladder to a weary man in a yellow life jacket.

Has all this emphasis on pilot-safety and rescue work softened up the combat airman? Has it pampered him or made him over-cautious? Hell no! He'd go out against the enemy whether it was there or not. But with it on his side, he fights like a man with two hearts — his own . . . and his country's.

Life in a life raft is cramped, but airmen who must endure it find many ingenious devices for living, and rescue is usually a natural sequence.

U. S. Navy Photo

FIRE OVER BURMA

(by Mail from India)

AAF Photo

"NAVIGATOR to Pilot . . . Number 3 engine is smoking . . . Number 2 is on fire . . . Number 4 is losing oil rapidly . . . Number 1 seems to be acting up also . . ."

Below, the jungles and mountains of enemy-held Burma were visible at infrequent intervals through the overcast monsoon sky. The crew of the B-24 heavy bomber, "Lost Angel," of the Tenth Air Force of the Eastern Air Command, were in a tough spot.

Chances of survival in a bail-out over this region are slim. It was up to the skill of the pilot and the stamina of the plane to get the crew back to safety. They did it. Later, the pilot got the DFC. There are no medals for a plane.

The engines on this B-24 had reached the 600-hour mark. That is an excellent performance anywhere. This was the last run for the engines before replacement.

The mission was routine. The officers were veterans. Pilot Lt. Charles J. Mueth had already amassed 1600 hours on B-24s. He holds the Air Medal and DFC plus an Oak Leaf Cluster for each of his eight months of combat in India. Co-pilot Lt. Daniel J. Michael had received the Air Medal. So had Lt. Arthur C. Eldridge, the bombardier. Lt. Robert C. Alby, the navigator, had won the Purple Heart in addition to the DFC and a Cluster to the Air Medal.

Their take-off had been made easily, and gave no hint of the trouble which developed later. The big bomber pointed its nose through the thick monsoon weather and headed for Central Burma. En route, it climbed steadily to an altitude of 13,000 feet, then levelled off between two strata of clouds.

One engine burning—three others faltering — and almost certain death beneath in Jap-infested jungles.

Two hours later, the Liberator swung over the enemy lines. Gunners Ray Mogart, Ray Walsh, Jr., and Vernon Kastle, were at their stations, alert for possible interception.

Without warning, one of the overworked engines began to falter. The added strain was too much for the others. Almost simultaneously, all the engines began to fail. Alby calmly called the pilot: "Navigator to Pilot . . . Number 2 is on fire." The B-24 began to vibrate violently from the uneven beat of the engines. Mueth pushed the alarm bell. The crew struggled into their parachutes.

Mueth feathered the prop on Number 2 engine as it burned—and the fire died out slowly. Rapid adjustments were made on the remaining three. One by one they picked up the cadence. The vibration ceased, and the three engines got down to business.

Mueth's voice came over the interphone:

"If I hit the alarm bell again, jump. I'll be too busy for any other signal."

Carefully, he brought the plane around and headed for home. He had already lost about 5000 feet. But now the B-24 maintained altitude with the three engines going. They required careful nursing. From time to time, one after another would give indications of trouble. All were losing oil. The sides and rudders of the plane were oil-drenched. Yet the sturdy ship by now was back over friendly territory, and within a half-hour of its base.

The strain was too much for Number 4. The vibration began again. Mueth had to feather its prop. So now they rode on two engines only. But the B-24 still flew on steadily. Alby spoke into the inter-phone.

"What a plane . . . I didn't know one would stay in the air at this speed."

Slowly the field came into view. With infinite care, Mueth maneuvered the plane in for the landing. Wheels came down. The hydraulic system worked.

"We'll play safe. Prepare for a crash landing," Mueth told the crew.

With the remaining engines throttled back, the aircraft came in quietly.

Mueth's citation, accompanying the DFC awarded to him for his part in bringing the aircraft and crew back, read in part: ". . . for extraordinary achievement while participating in aerial flight. He was entirely responsible for saving the aircraft and lives of his fellow crew members."

No medal for a plane . . . But Mueth's first act on getting out of the B-24 was to go forward and pat it on its blunt nose.

Above: Hardworking townsfolk of Redmond take a breather from their job of brush-clearing for runways at the CAP Airpark.

HOW WE GOT OUR AIRPARK

By Mary E. Brown, 2nd Lieut. CAP

It happened in just seven hours on Sunday, August 27 — the transformation of sagebrush flats five miles west of Redmond, Oregon, into a going airpark, with runways that were used by a plane the same day construction was started. Two months later, Redmond's Civil Air Patrol Airpark had a hangar large enough for three planes, and had received official designation from the Civil Aeronautics Administration.

It was like a magic carpet unrolling at unbelievable speed. Some 30 members of Redmond's CAP squadron and their willing helpers did the job. They arrived early in the morning with mechanical equipment borrowed from the Redmond army air field, the city of Redmond, and businessmen and farmers. Besides the heavy machines there were quantities of pitchforks, grubbing hoes and shovels —all in hands eager to man them.

By nine o'clock graders were humming up and down the flats; a bulldozer was flattening trees. A rake and leveler crisscrossed the runways. Trucks hauled away sagebrush as pitchforks and grubbing hoes flew back and forth under the broiling August sun.

By late afternoon the runways, one 1900 feet long and the other 1200 (since extended to 2400 feet), were usable. At least, they looked good enough to Lt. Walter Howard, commander of the CAP squadron in the nearby town of Bend. At four o'clock he made the first landing on the north-south runway.

The reception committee threw down its picks and shovels, and Lt. Maurice F. Roberts, commander of the Redmond squadron, Dick Ballantine, flight instructor and now manager of the field, and other CAP members welcomed the first pilot to land on Redmond's brand-new airpark.

It all looked like a miracle of speed. Actually, it wasn't quite that fast. First, the idea had to germinate. For the last dozen years or so, Redmond folks have taken the lead in developing Central Oregon's aviation. The clear, dry climate yields 349 flying days per year and makes the locality ideal for year-around flying.

Above: Even women members of the Redmond CAP pitched in. Here four of them are carpentering on the Airpark's new hangar.

But the town's citizens have had no airport during the war. Construction of a Class 4 municipal airport was begun by the WPA in January, 1942, and the field was extended by the army. When the army air forces took over, the city retained ownership under the terms of its lease with the government. But the huge base, with its paved runways, taxiways, parking aprons and operational facilities, will not be available for civilian use until after the war.

Making Roberts Field a military base for the duration didn't cause Redmond citizens to give up flying for the duration. There was a spot near Cline Falls on the Deschutes River that was already quite level and fairly clear of trees, because it had been part of a big ranch. Air-minded citizens had frequently eyed this as a good location for a landing field. Several CAP members began taking flight instruction, and the idea developed: why not build a field at Cline Falls for use until such time as the army returns Roberts Field to the city? And, besides, isn't there often a need for smaller auxiliary fields near large ones, for the use of private pilots and their "puddle-jumpers?"

So came the decision to build an airpark. First was the matter of land. Here began the help that made the field possible. Redmond-Sisters Sportsmen's club owned 40 acres of the site selected. War had taken away their shells, and the trapgrounds were not being used. The sportsmen were eager to cooperate. "If we can't launch clay pigeons, maybe we can help put a few planes into the air," they said.

Right to use an additional 40 acres was obtained from the Deschutes County court, through the cooperation of Judge C. L. Allen and commissions of the County.

And so, with 80 acres of land on their hands, the CAP members began to consider how to get two runways built. There was the engineering detail of staking out the runways and getting them in line with the prevailing winds — and this had to be done just right. Ballantine's knowledge as a pilot was combined with the skill of Forrest Cooper, resident state highway engineer, to do the job.

Is your town getting ready for the air age?

If you are going to enjoy personal flying post-war, you'll want an airpark near at home. Manufacturers are already planning the planes for you—see, for instance, the new Stinson Voyager shown on Page 28. But not all towns make it easy for citizens to fly.

Here is how a town in Oregon built its own airpark for small planes at almost no expense at all. It is one of 81 such projects built by CAP members in 22 states, and more are on the way. If you want added information on building airports, airparks, and flightstrips, write for a booklet to the Aeronautical Chamber of Commerce, Room 3324, Empire State Building, New York 1, N. Y.

Next was the detail of equipment. The personnel of Redmond army air field offered to cooperate with the CAP, as an auxiliary of the army air forces, and the base sent a large grader and a bulldozer to help build the runways. The city of Redmond helped by sending out its blade. A dentist who operates a nearby farm as a hobby loaned his tractor, and drove it himself. A land leveler and quack grass machine was loaned by the president of the Redmond Flying Club. A dairyman who lives near Cline Falls sent his rake, which was used to pick up sagebrush. Trucks owned by CAP members and their friends were used to haul away brush.

Aiding the grown-ups, a group of small boys did valiant duty, while one citizen served hot coffee, and others supplied cold drinks.

WHILE one Sunday's work made the runways suitable for landing, much still remained to be done. On the following Sunday, the CAP held a second field day to smooth out and sprinkle the strips, using road sprinklers loaned by Deschutes County and the city of Redmond. On a succeeding Sunday the air field grader again was used, and this time the length of the north-south runway was doubled, making it 2400 feet.

Redmond Flying Club was now organized and had purchased an airplane. But before construction of a hangar could begin, application had to be made to the Civil Aeronautics Administration for permanent designation of the field. Detailed maps of the field were drawn for submission to the CAA, and about October 1 the word came that the designation had been granted by Washington.

Then the flying club and Ballantine got busy with plans for their hangar. It was decided to construct a building 28 by 80 feet in size, large enough for three planes.

Materials were obtained wherever they could be found. They included part of the old hangar which had stood at Roberts Field before it became a military base. Poles that had been set up during army maneuvers in Central Oregon last year were bought at a low price. Other used lumber was secured. The hangar was laid out and started last October 15.

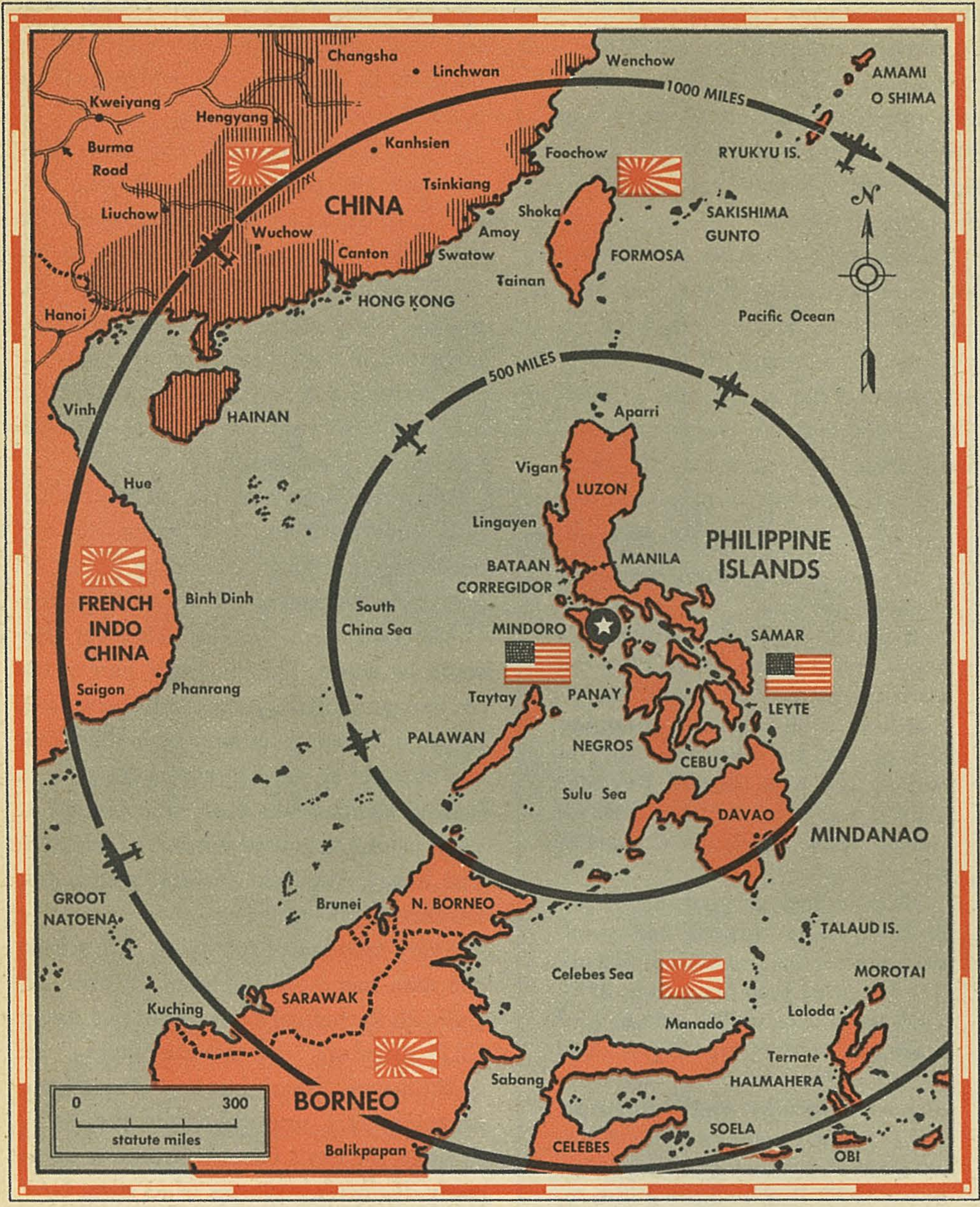
Every member of the flying club turned out with hammers and saws October 22, and with the help of a number of non-flying CAP members, the hangar sprang up.

While the airpark has been constructed primarily as a stop-gap while the Army occupies the city's Class 4 airport, it offers many distinct advantages of its own. CAP members are beginning to think of it as a possibly permanent installation — a "jalopy" field, so to speak, for smaller, privately-owned aircraft and for the training of student pilots.

The idea is comparatively new, but it is taking hold in lots of places. Many metropolitan centers are arranging now for their post-war airstrips and airparks, where pilots may land their planes conveniently close to destinations without getting mixed up in heavy air traffic.

Perhaps Redmond will find its CAP airpark is still needed even when the town's big municipal field is again available. The project has proved one thing — any town that needs an airport or airpark can have it, if the citizens will all pitch in.

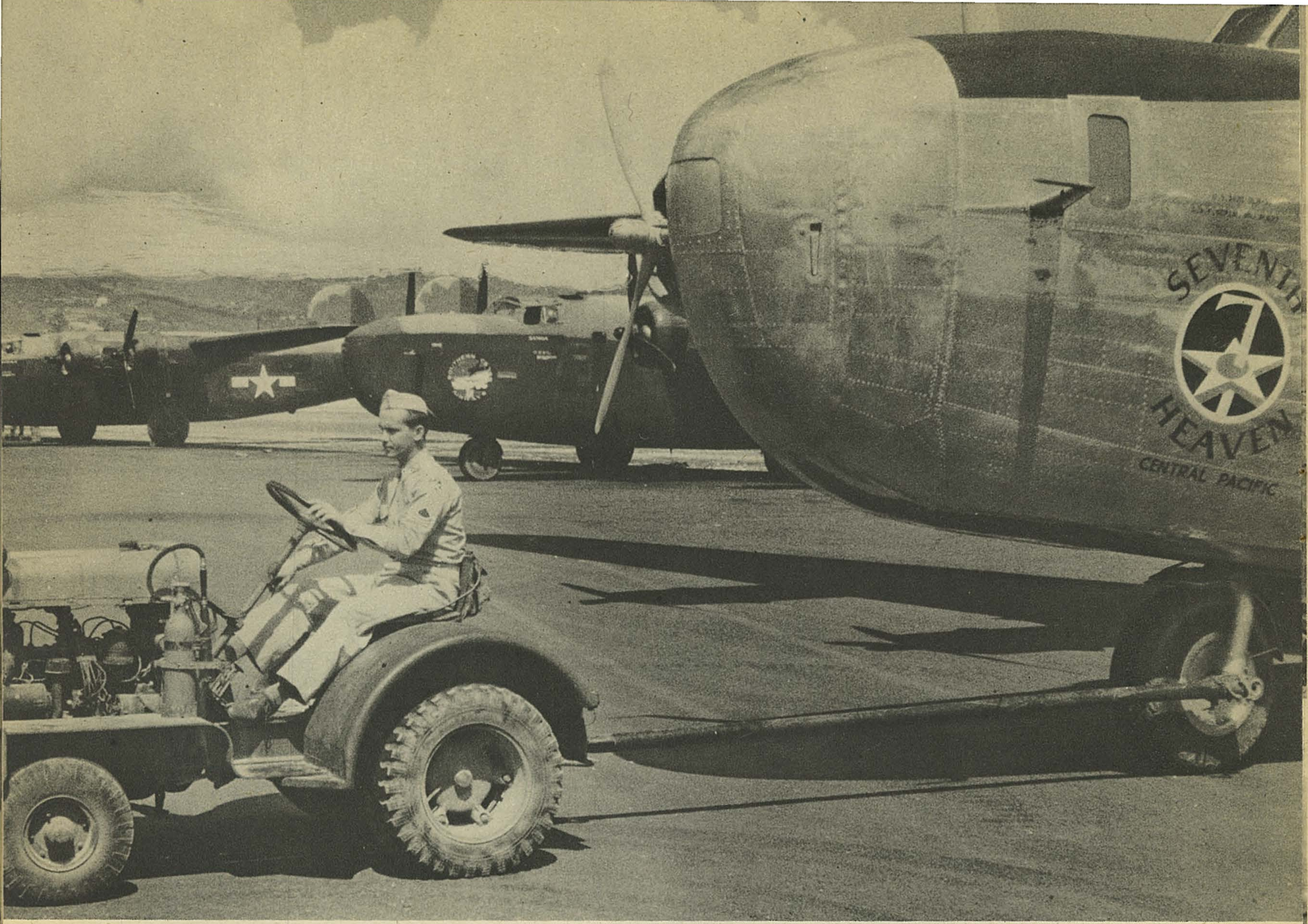
COMING TO GRIPS WITH THE JAPS



This fiery picture comes via airmail from the 13th Air Force in the Pacific, to show a Liberator strike against a major Jap fuel supply. The scene is in the skies over Balikpapan, on Borneo, where some 33 per cent of Japan's oil resources are located. (You will find Balikpapan at the bottom of the inserted map.) The huge smoke columns are rising from the Liberators' direct hits on the Pandansari oil refinery and a paraffin refining base near-by.

Such strategic bombing of Japan's vital resources heralds — just three years after Pearl Harbor — a long-distance striking power no nation has ever possessed before. At long last we are coming to grips with the sprawling empire which the Japs thought barricaded by distance. Last year we made extraordinary progress in obtaining air bases for this purpose. By winning the island of Saipan (to the east of the region mapped here) we secured a base that permits us to fire Tokyo itself with our super bombers. Through MacArthur's skillful recapture of key bases in the Philippines, we start off 1945 with other air fields that will permit us to bomb the Japs where-ever they have accumulated their strength for war.

Supplies are still a problem. Early in January, 1945, it was announced that Liberators are being used as aerial fuel tankers to deliver gas to Far East bases where super bombers take off for Japan. Modified to make a fuel tanker, the Liberator is called the C-109; it carries several thousand gallons in specially designed tanks in the nose, wings, bomb-bay, and fuselage. This gas supply, on which it can draw in flight, gives the C-109 the longest flying range of any airplane in the world. In just two and a half months in 1944 Liberators flew more than two million gallons of gas over the Hump from India to our Chinese bases.



AAF Photo

Above you see three of the five, with *Seventh Heaven* in the foreground, at 7th AAF Headquarters.

5 old *faithfuls*

By SGT. WILLIAM CUNNINGHAM

By Air Mail from the Seventh Air Force

THIS is about five old Liberators in the Pacific.

The Pacific is a Liberator ocean. Liberators have been flying its wastes, daring its threats, pounding its Jap installations, almost from the start of our airwar there. No other heavy bomber has been seen there in such numbers.

But these particular five planes I want to tell you about here are something very special, even among Liberators. They are history still alive and on the wing. Together they have flown some 1,850,000 miles — they are the oldest planes still flying in the Pacific theater.

These are the ships that really started the Liberators' Pacific reputation. It was in the summer of 1942 that Liberators began coming into the Central Pacific in any number. Since then hundreds have flown through the Hawaiian Islands on their way to the Southwest Pacific where they helped stem the Jap tide. Many others have stayed with the 7th AAF in the Central Pacific, to spearhead the drives which moved 7th AAF bases 3,600 miles to the west through the Gilberts and Marshalls to the Marianas — bases which put the Liberators in easy striking distance of the Carolines and the Bonins.

These five veterans were among six Liberators which preceded the rush by more than six months. They were LB-30s, a version of the Liberator originally made for the RAF. They arrived early in February of 1942.

The history of the very first Liberator in Hawaii was brief. It arrived December 4, 1941. Four days later, in the Jap attack on Pearl Harbor, it was practically the first thing the Japs hit when they bombed Hickam Field. It was blown to pieces.

Six more arrived two months later to receive a kindly welcome. But these were not regarded as suitable for combat because of previous British use. Hence they were turned over to the 7th AAF's Southern Cross Airways as long-range cargo ships, stripped of guns and bomb racks and furnished with extra gas tanks for long hauls.

Five of these six still function. One was lost on a flight to Midway in June of 1942, when the Navy and the 7th AAF met the Jap task forces headed for Midway. The surviving five, serving as cargo ships, became an integral part of the rather unusual organization known as S.C.A.

The name of the Southern Cross Airways was suggested by the late Major-General Clarence L. Tinker, former commanding general of the 7th AAF, who lost his life in the final stages of the Battle of Midway. General Tinker was instrumental in providing the planes for the line, which he named for the famous pioneering plane of Kingsford Smith, first to fly the route from Hawaii to Australia in 1928. The new airline used the same route, to hook Hawaii with the advanced bases of the 7th AAF.

When the first of the four-engined bombers was assigned to the squadron there was a certain amount of consternation among the ground crews.

"Not one mechanic in the squadron knew anything about maintaining a four-engined plane when we got our first LB-30," Master Sergeant Douglas O. Anderson, Lawrence, Kansas, recalls. Anderson is line chief and has been with the squadron since its beginning.

"We had neither spare parts nor tech orders for the planes. So our efforts at maintenance were sort of a hit and miss proposition for a while. But the mechanics soon learned by working on them. You might say that the planes were so well put together that they were able to go for a while without too much maintenance. They flew anyhow."

Fortunately for the squadron, its cargoes and the planes, tech orders were forthcoming shortly. And, as more Liberators started arriving in Hawaii, the spare part problem was solved before there was any serious need for new parts.

The first LB-30 was named *Old Faithful* because, as the crew members said, "She always got 'em there and she always brought 'em back."

Old Faithful was General Tinker's favorite plane. He used her on one of the first extended flights to the islands south of the Hawaiian group. She was the first airplane to fly the route from Oahu south to Christmas Island, then to Penrhyn, to Aitutaki in the Cook Islands and to Tongatubu in the Tonga Islands. She was the first airplane of any kind to set a wheel on the landing strips at Penrhyn and Aitutaki. The event was properly acclaimed locally at each island — although the existence of such bases was not advertised too greatly at the time, because of Japanese interest in our military routes. This route to Australia was later used by the Air Transport Command when it moved into the Central Pacific.

AAF Photo

Major General Willis H. Hale, who made old *Seventh Heaven* the flagship of the 7th AAF.

With two other LB-30s, *Fast Freight* and *Trader Horn, Old Faithful* escorted a squadron of P-40 fighters from Kauai in the Hawaiian group to Midway, a distance of 1,155 miles, to relieve another squadron stationed there. The following day the three big planes escorted the relieved unit back to Kauai.

The trip was the longest over-water hop ever attempted by P-40s, and was the first of numerous similar tasks which the Southern Cross Airways has undertaken. The Liberators, as larger planes, had the duty of providing navigation, and of standing by in case any of the fighters were forced down.

As the 7th AAF reached out to establish bases closer to the Japs, the bases needed P-40s and P-39s to protect them. The fighters were piloted to them by the LB-30s.

Old Faithful became the 7th AAF flag plane after Major General Willis H. Hale succeeded General Tinker as commanding general. Her name was then changed to *Seventh Heaven.* So today one can just as well lend *Old Faithful* as a family name to all five ships of her vintage. *Seventh Heaven* was the first of the Southern Cross Airway planes to have her olive drab paint removed. She enjoyed the distinction of flying in bare and shiny duralumin for nearly a year before all the other AAF planes shed their paint.

With General Hale the plane set two records for speed. One was her trip to Washington from the Hawaiian Islands in 22 hours and 25 minutes of flying time for the 4,845 miles. Her first flight from the Hawaiian Islands to the 7th AAF's advanced base in the Marshalls, a distance of 2,400 miles, made another record of 11 hours and 30 minutes.

WHEN General Hale became commander of all land-based aircraft in the forward area of the Central Pacific, *Trader Horn* took the place of *Seventh Heaven,* and was rechristened *ComAirFwd.* Old *ComAirFwd* was the first Southern Cross Airways plane to land on Saipan after the capture of the airfield there from the Japanese. At that time it was carrying General Hale on a tour of inspection. Saipan is the airbase which has done so much to make routine bombing of Japan possible.

As *Trader Horn,* the plane established a record for carrying one of the strangest cargoes of high priority material reported in our air war. It was 5,000 pounds of wheat, brought from the mainland to Hawaii for use by the Hawaiian Air Depot in a sand-blasting process to clean light metal parts.

Among the first planes to land on the airstrip at Penrhyn Island, northwest of the Society Islands, was *Fast Freight.* With another LB-30, *Flight Chief,* she once escorted a flight of night fighters from the Hawaiian Islands to New Guinea. *Fast Freight* is now called *Samoa.*

Flight Chief can boast of being the only heavy bomber in the Pacific with credit for sinking a Nazi submarine. She still has a submarine painted on her nose. The sinking occurred when the plane was used on patrol duty off the coast of Florida before being sent to the Central Pacific.

Flight Chief also was the pathfinder plane for the Air Transport Command. Brigadier General W. O. Ryan, commanding general of ATC's Pacific Wing, used her to travel with his staff on a tour of inspection of bases en route to Sydney, Australia, from the Hawaiian Islands. That route is now a regular run for ATC planes.

The *Chief* has survived some bad wounds. One night last January, for instance, the *Chief* was at Tarawa in the Gilberts when the Japs staged a bombing raid. Shrapnel put 78 holes in her, and severed two control cables and a hydraulic line. Starting immediately after the attack, the crew of the ship made necessary repairs and got her off to Hawaii on schedule.

From March to October, 1943, the *Chief* was dear to the hearts of 7th AAF personnel because of her *Sun Valley Run,* the name given a semi-monthly shuttle run between the islands and the mainland. Through these runs, men who could get 15-day furloughs were placed on an equal footing with men on the West Coast, as far as starting the furloughs was concerned. Today the plane's name has been changed to *Australia.*

The fifth of the LB-30s still flying is known as the *Gremlins' Work Shop,* so named because she has been the hard-luck ship of the outfit, and has given her crews a variety of troubles.

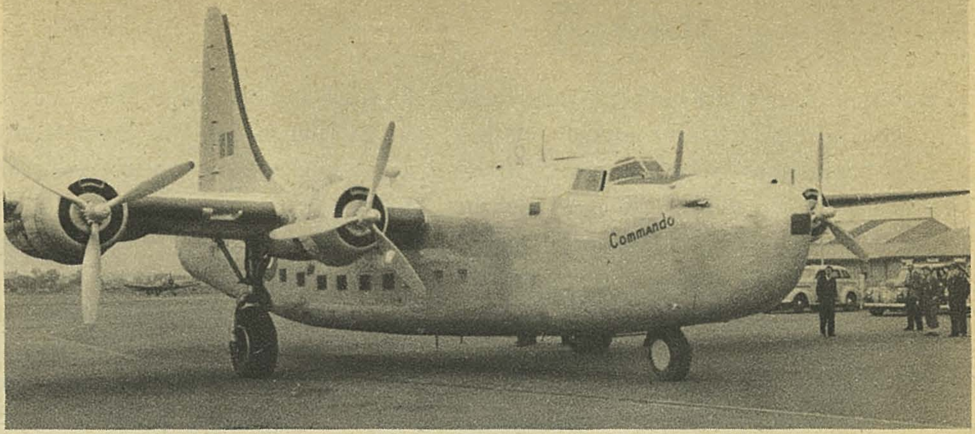
Latest adventure of *Gremlins' Work Shop* was with Lieut. Col. Stephen J. Rosetta at the controls. The Colonel is now operator of Southern Cross Airways, and commander of the troop carrier squadron. Headed from Hamilton Field near San Francisco to Hawaii, engine trouble forced him to turn back on three engines when he was five hours from the coast. Two hours away a third engine, which had been almost due for a change, cut out.

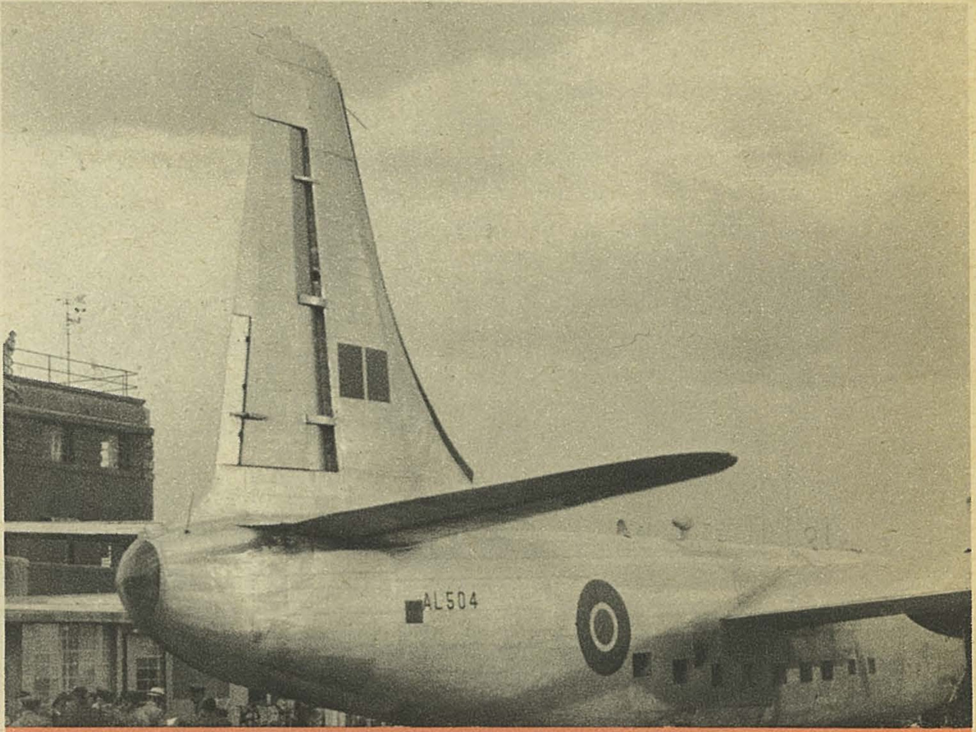
Approaching the San Francisco Bay area, the Colonel found he was flying almost level with the Golden Gate Bridge. He faced an appalling dilemma. If he flew under the bridge he might not be able to regain sufficient altitude to get into Hamilton Field. If he tried to fly over the bridge the added strain on the two remaining engines might cause one of them to burn out.

He elected to coax the limping plane over the bridge and succeeded in doing so.

With an eye to the future, Southern Cross Airways is now training and planning for the time when its planes will be carrying priority freight and personnel beyond the Marianas — eventually, perhaps, to Tokyo.

There will be newer planes, possibly better planes, on the Southern Cross Airways then. But the chances are still pretty good that the new comers will occasionally pass one of the five *Old Faithfuls* still making their rounds.





BRITISH USE A ONE-TAILED LIBERATOR

PICTURED above is the Commando, a Liberator in service on Great Britain's new trans-Pacific route that spans over half the world between Montreal and Australia.

It is the same Commando that was once used by Prime Minister Winston Churchill for the extensive globe wandering that was required of him in attending conferences. (See *Plane Talk* for June, 1943.) As his personal plane, the Commando visited every major continent on the earth, after first carrying Mr. Churchill to Moscow in 1942.

Now the plane has had a complete overhauling and rebuilding; something has been added, and something taken away. Gone are the Liberator's familiar twin tails; wholly new in Liberator lore is the single tail pictured here, 31 feet high. Seven feet have been added to the ship's length.

The new British military air service operating between Montreal and Sydney, Australia, is said to be the longest single air route in the world.

It makes stops on United States territory by touching at San Francisco and Honolulu, and runs thence southwest with other stops at Canton Island, Fiji, and Auckland, New Zealand, before reaching Australia.

When the line is in full operation, it will use several Liberators, each capable of carrying 3 tons on long hauls, to cross the Pacific weekly on four-day schedules. Two round trips a week between Australia and New Zealand have also been announced. The Commando's first round trip from Montreal to Sydney and return, made last November with 20 passengers and valuable cargo, was completed in 4 days, 16 hours and 10 minutes of flying time.

This new trans-Pacific service, which is unofficially described as a further indication of Britain's increasing interest in Pacific operations, will connect at Montreal with the daily North Atlantic service to London. Air Commodore Griffith Powell, R.A.F., has the general direction of the new Pacific service from Montreal.

PACKAGING PLANES AND THEIR PARTS

Below: Crates with spare parts for Liberators waiting shipment at Ft. Worth.

FROM a jungle fenced-in field in India, a cargo-laden Liberator drones cloudward and points its nose toward China.

Stacked away, securely wrapped and battened down in the aft quarters of the planes, are materials and machines, spares and equipment on which many lives may depend.

It's the new Pony Express of the skyways, and if its supplies are to be usable when they arrive, they must first be properly packaged.

On small-sized shipments destined for overseas' use, particularly those ranging in weight from five to 25 pounds, a carton-bag-carton type of package has been developed.

The material to be shipped is first encased in a heavy board carton. This is then wrapped in a moisture-impervious bag or envelope which is sealed with tape and placed in another carton of 200 pound minimum-test board.

The final package is air-tight and waterproof.

The size and weight of such items as complete aircraft engines, jeeps and tanks prohibit the use of an inner container.

In these instances, special chemical agents, identical to those used on engines being prepared for overseas shipment by boat, are utilized in and on the power plant.

If size permits, the items are wrapped in a protective covering before being secured into the cargo hatch of the plane.

The exact percentage of aircraft spares and other materials sent by air transport to theaters of operation is a military secret.

Of complete aircraft going into theaters of operation, an estimated 70 per cent are flown to their destinations.

The remaining 30 per cent — those with a fuel capacity that limits their range — are stowed aboard ship for delivery.

In preparing the plane for a journey by ship, its wings and tail assembly are removed and crated. The rest of the airplane is left as it was when it rolled from the assembly line.

All seams and joints of the fuselage are sealed with a hydroscopic, moisture-impervious tape. The entire fuselage is then sprayed with a moisture resisting agent.

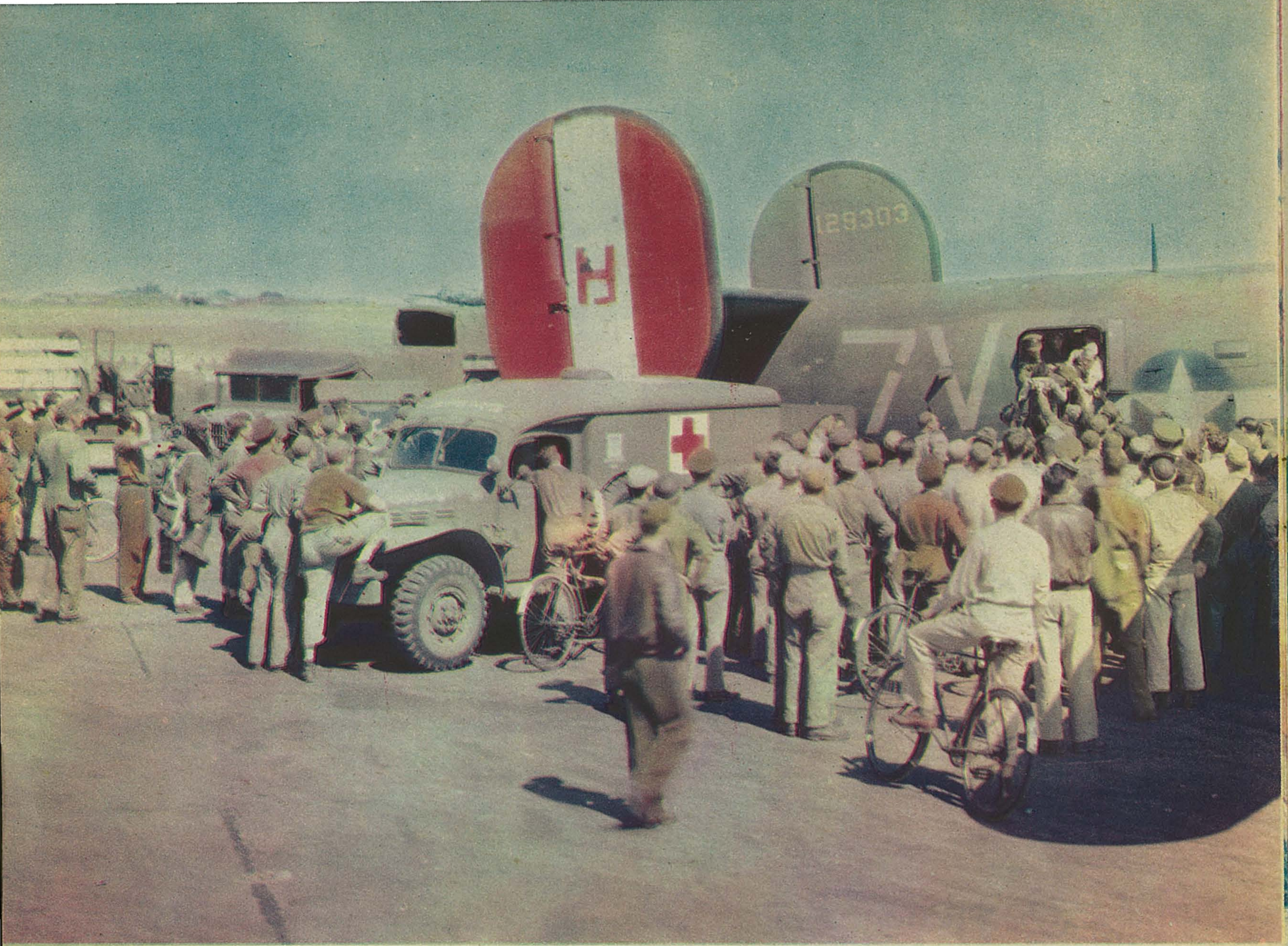
The motor receives treatment similar to that received for long-term storage. All parts are completely sealed by spraying, and the power plant is enclosed in a moisture-impervious plastic, paper-type envelope or bag.

In the field and under actual combat conditions, ground crews can reassemble an airplane, thus packed and crated, in less than six hours.

When the plane is to face a long period of storage overseas, or must be transported from a dock area to a theater of operations, the entire airplane is crated.

The wings, tail assembly and propeller are removed and crated in the same way as for deck shipment of the airplane. The fuselage with its component parts are also housed in one large, wooden crate.

Some of these crates require as much as 6,500 feet of lumber, and are so large that soldiers in war zones have pressed them into service as emergency barracks or small store houses.



THEY SHALL BE COMFORTED

By
Sally MacDougall

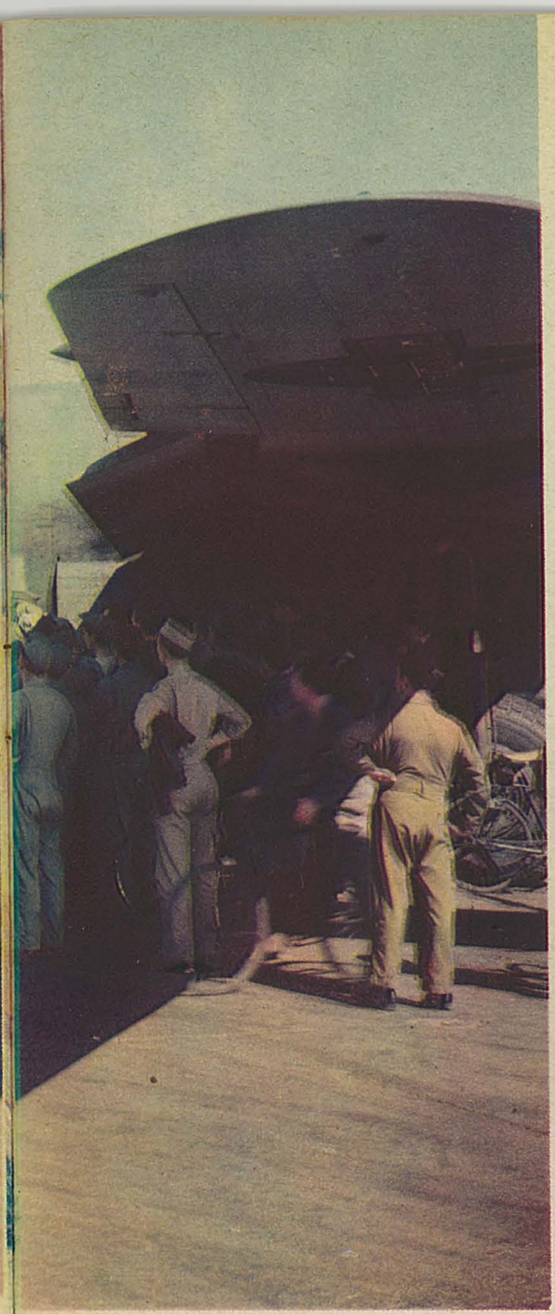
This story of what happened to Robert Hudson makes one fact clear: wounded airmen receive superb medical care and attention.

ROBERT E. HUDSON left high school in Decatur, Illinois, at 17, and after short spans of training here and in England became Staff Sergeant Hudson, serving as a waist gunner on a B-24 Liberator bomber of the Eighth Air Force over Germany. At 19 he made the return ocean voyage to America in bandages. What happened to him after he was wounded illustrates the care given by the armed services to every American lad wounded by our enemies – whether in Europe or the Far East or the strange isles of the Pacific.

Today the sergeant is a patient in the Army's Mayo General Hospital in Galesburg, Illinois, near his own home. The seriously wounded who return to this country are hospitalized as near their family as possible. Thus he could go home to his family for 1944 Christmas dinner. When the family car came for him, the boyish sergeant stepped out of a contrivance in which he is learning to walk again, and was helped into the back seat to spend his first few hours in nearly a year away from hospital life. Out of pajamas and in uniform, he had his tunic brightened with the Distinguished Flying Cross, the Purple Heart, the Air Medal, the European Theater of Operations with three bronze stars, and the Good Conduct Medal.

Incidents connected with most of these decorations were crowded into one eventful day, last February 21st, when Sergeant Hudson made his seventh and last flight over Germany as a waist gunner in the Liberator called Old Bag O'Bones.

Before this mission, as always, he had taken time to read the 93rd Psalm from a tiny Psalm book he kept fastened to his parachute: "The Lord reigneth. He is clothed with majesty; the Lord is clothed with strength. . ." Hudson says that at his guns in the plane he also used to recite a



AAF Kodachrome

Wounded airmen transported from war zones in Liberator C-87 reach a hospital base.

prayer which another soldier had written:

"God of the evening, God of the dawn . . .
God of the morning, God of the light,
Keep our engines strong in flight.
And then, O Lord, if it is Thy will,
Give us days and nights when we need not kill . . ."

Events of the day of that final flight are etched in the waist gunner's mind. He remembers them in terms of walking—"my last walking" — walking across a field in the chilling mist before sunrise, walking to chow house for breakfast, then walking to operations where the crew got into flying togs and the chaplain said a prayer. Then the crew went to the briefing room for data on the day's raid. They picked up parachutes and walked to the truck that carried them to the stand where Old Bag O'Bones was parked.

"I stood fireguard on the outside of the ship," he says. "We taxied along the narrow perimeter, awaited our turn for the take-off. We were next. With the ease of a gull, our ship soared into the air."

He waved a hand with a length of red yarn in it as he told this part. In the hospital, he does handicraft work, hooking yarn into canvas to make the bright design of the Eighth Air Force. Such work steadies a man's nerves.

"At the pilot's signal we went to our stations. I helped the bombardier pull pins from bombs and went to my gun position. I still had to put on my equipment. I can't get through the bomb bay door with it on."

He still identifies himself with that Liberator outfit in the present tense.

"Over the channel," he remembered, "the pilot called us individually and asked how things were. Did we feel O.K. and were we all set? As usual, he signed off by saying, 'All right, give 'em hell.' What a pilot he was that day! He is Lt. H. E. Broxton from Birmingham, Alabama.

"Then we were in Germany, nearing our target. It was 40 to 50 below. When our oxygen masks froze, we'd crush the stuff and knock it out. As flak rocked our ship, I saw holes appearing in the fuselage.

"We were making our second run on the target. F.W. 190's swarmed in. The pilot held our plane in formation and executed a 360-degree turn. 'Bomb bay open!' I heard. Then, 'Bombs away!'

"They silenced our No. 1 engine. Number 4 caught fire. The upper turrets, nose and tail turrets were out of commission. Cannon fire. Everybody and his little brother came to get us. Our job had been done. Now we had to get back across that territory of hell.

"Hell kept on popping. In a split second I was hit in both legs. The other waist gunner was covered with hydraulic fluid. Our lines were shot away. We had no oxygen, no interphone. We tried to keep our heads. I pulled the tail gunner out of the tail and sat him on the floor. He looked at me with a strange expression. I asked him where the hurt was. He pointed to his leg.

"We took care of it with what we had and I went back to my gun. My buddy back in the waist was on the floor. He was out. I gave him oxygen. He came to and I gave him morphine. Just then Jerry sent a 20-mm into the ammunition belt. It rebounded to my side. That put me out of commission. I couldn't move. My body had suddenly frozen from the waist down. I tried to handle the guns again. Then I lay on the floor and I just prayed."

THAT was when Sergeant Hudson realized that the ship was on fire. The wounded tail gunner managed to get to where he was and pulled him from approaching flames. "He kept me from being burned alive. The fire was getting worse. Our part of the ship was very hot.

"The bombardier and nose gunner came, just in the nick of time. They exhausted two fire extinguishers, then used flak suits and mits and even their bare hands, fighting the fire. I asked the bombardier how many engines we had left. He didn't answer. He gave me morphine."

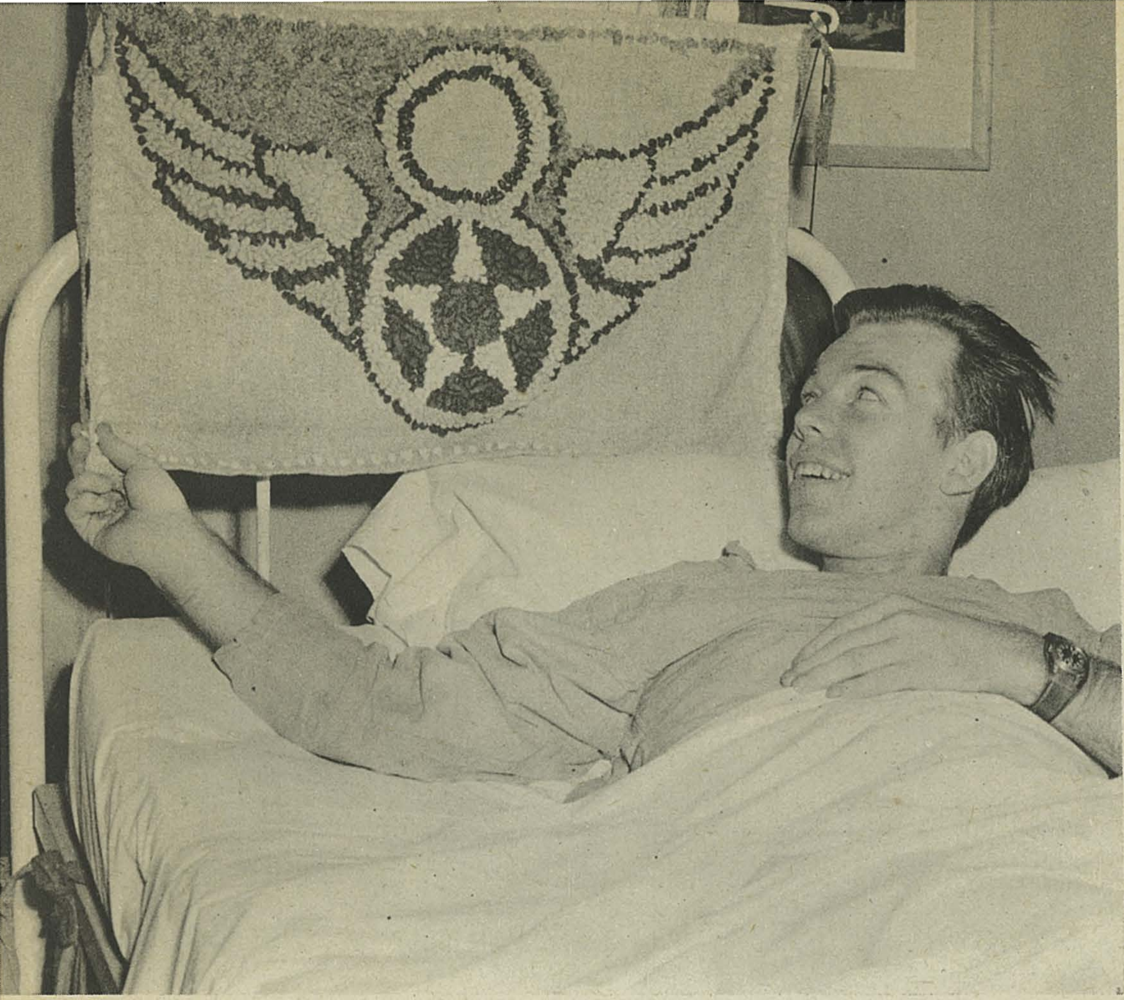
He remembers seeing the engineer and radio man trying to get the bomb bay door shut. He looked out of a small window on the underside of the ship and realized that the ship was rising to avoid trees and houses. "It scared me to see that we were so close to the ground."

Later he learned that while the plane was on fire, the other waist gunner bailed out. "He couldn't have known how low we were. We were so close to the ground his parachute hadn't time to open. That was why one of our crew of ten did not come back that night.

"Our pilot made up his mind that we were going to get home, and get us home he did. A couple of other ships came in at the same time. We had no brakes. To avoid crashing into the tail of another ship, our pilot headed our plane to the center of the field. We came to a halt slinging mud everywhere. The bombardier was holding me so I wouldn't get jarred. I was rolled in blankets."

While the flight surgeon was checking his wounds, he could hear men outside counting the holes in the plane, and wondering how the pilot ever managed to keep her in the air. A body splint was fastened on him. The doctors, crew and pilot eased him through the window.

"It was wonderful to be outside and alive, really outside in the air. Some of the crew gave me the raspberry about how tough it would be to kill me. Then I was lifted into an ambulance and rushed to the hospital on the base. In a few minutes they were cutting off my clothes. In a few hours



N.Y. World-Telegram

Sergeant Hudson in Halloran hospital, with his handicraft hung on the wall behind his bed.

I was again in an ambulance, headed for a larger station hospital.

"On the way I was terribly thirsty. I asked for a drink. They just gave me some wet cotton soaked in cold water. The flight surgeon pressed that against my lips. He was on one side of me and the chaplain on the other. I felt they knew what was best. But I still wished I could have a drink of water. Then came the operating room."

In the operating room the nurse winced because he was gripping her hand too tight. The chaplain took over. The anaesthetic engulfed him. The rest he only knows because they told him.

The first operation was a disc operation on the spine. The next was one to remove the right kidney, because of injuries the young gunner sustained when the ammunition belt was hit. When he awoke the second time, one large toe had been slit open to let out a piece of shrapnel, and there were also seams on legs and arms.

Then forty days went by, in a big base hospital in England – time for stitches to come out and for flesh seams to knit. Now he was given another and longer ride, this time to a big general hospital for American soldiers in England.

"There they started physical therapy treatments on my legs," he says. This is a long and patient and thorough process, designed to induce feeling and strength to return into flaccid muscles. He says that the lack of feeling in his legs seemed at first like being frozen.

After a month in this general hospital, the head doctor told him he was going home. "I guess I was the happiest boy in the world when I heard those words," he remembers. "We were taken to a port and put on a hospital ship. I understand the really bad cases often come back by air – especially if they are coming from the Far East theaters. But the ship seemed wonderful.

"It was a swell trip. We had regular care all the way over. The therapeutic treatments on my legs were continued, but were shorter because there were so many of us. Those nurses were wonderful.

"From the ship in New York we were taken to Halloran General Hospital on Staten Island. I was carried into a great building, and immediately the Red Cross Gray Ladies came around with trays of milk and steaming coffee. I never knew anyone could be so glad to hold a glass of real milk as I was.

"I'll always remember Halloran as the place where I could move my toes and feet again. I'd try to get movement into my toes but it wouldn't come. Then one morning it did. That was a big day. I had never believed it myself—but I knew some people were afraid I'd never walk again, and that paralysis would be permanent. Since then there's been some improvement every week. After it goes on long enough, I'll be up and around."

In this war, more than ever before, the government's hospitals are centers of specialization. When one hospital has given the particular kind of special treatment a patient needs, he is moved – often flown – to another. From Halloran, young Hudson was sent to Schick General Hospital in Iowa.

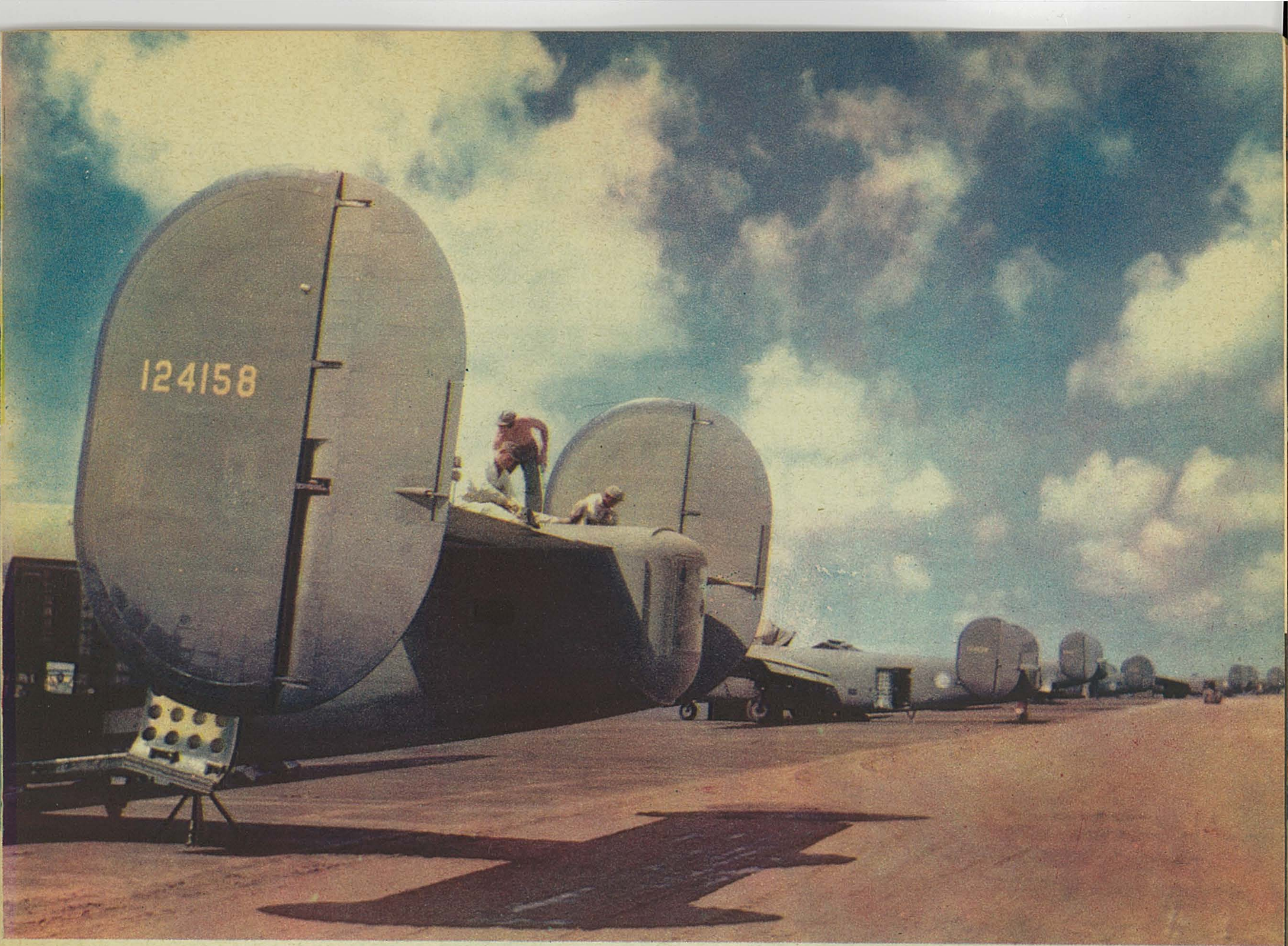
"That's where I first got into a walking machine," he said. "It supports me while I move my legs. I'm told little babies often are also taught to walk that way. Improvement has been fast since then."

The ward of an army hospital can be a cheerful place. Fellows in neighboring beds get acquainted and they play games – checkers or chess. Or perhaps they play catch with somebody's knitting yarn. Always, if possible, a wounded soldier is sent finally to the hospital nearest his home. Being in the home area and being visited by family and friends is considered supplementary treatment by the doctors.

There was less regret saying good-bye to friends at Schick when the sergeant was told that his next sojourn was to be at Mayo General Hospital in Galesburg, Illinois. Illinois was home, even if Galesburg wasn't Decatur.

"Besides," he explains, "the army had just made the Galesburg hospital into what is termed a nerve center. That means that the doctors and nurses who had been helping us also moved to Galesburg, and so did many of the patients I knew, and I guess we all felt it was like a new home. Then, when my mother called at Mayo, and told me she had permission from the doctors to take me home for Christmas, it just didn't seem real."

That is the bare outline of the story of just one wounded American. Many things have been left out, as they must be in any story of a brave man's experience. But it is long enough to show, perhaps, that every American who is wounded receives the finest kind of care that our nation has in its power to give.

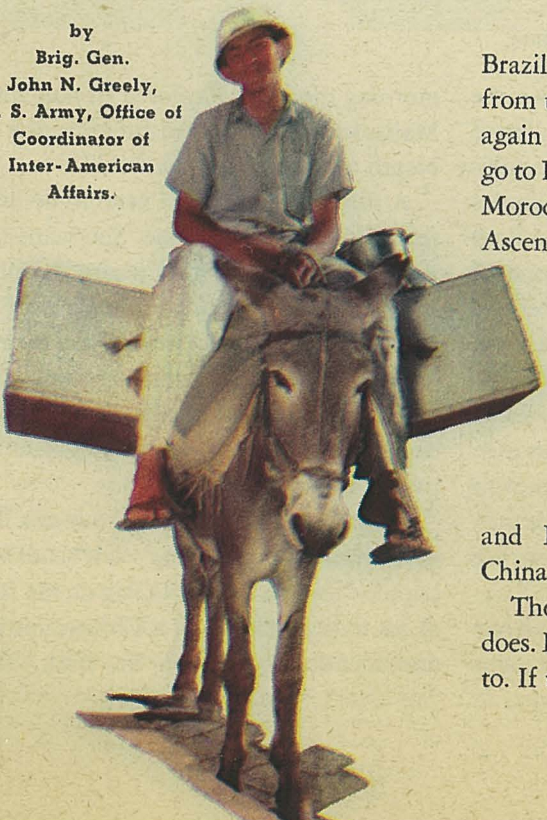


Dmitri Kodachrome

Good Neighbors at Natal

Liberator Express planes at Natal, in the ATC service.

by
Brig. Gen.
John N. Greely,
U. S. Army, Office of
Coordinator of
Inter-American
Affairs.



In Portuguese the word "Natal" means "Birthday." Used by itself the word refers to the Nativity of Jesus.

My boy and yours may fly a bomber through Natal. Or they may be flown through on a plane of the Air Transport Command. Today Natal is not only one of the busiest places in Brazil. It is one of the most important crossroads of the world.

I flew from Miami to Natal in thirty hours in the same plane. We hit the ground briefly in Puerto Rico and British Guiana — for breakfast and lunch. The crews changed at each place, but the ship kept going. That is characteristic of all our air transport. It keeps going night and day —you are hardly conscious of its enormous power and range.

The South Atlantic Wing in northern Brazil is a bottleneck into which fly planes from the north by various routes. Out of it again the traffic separates. The planes may go to Dakar, Algiers and Naples, or through Morocco to England. They may go through Ascension Island and Accra to Egypt, Iran and Russia — or to Arabia, India and China.

Thousands of Liberators have flown through Natal and tens of thousands of our men. It has become a crossroads of the world.

The traffic has to move smoothly and it does. It operates like our best railroads used to. If the weather on occasion prevents flying into some African field, you see the result in twenty-four hours. The dispersal areas at Natal are full of planes and the High Command is busy trying to park some more under their bunks.

This is the greatest war activity in Latin America today. It has been made possible only by the finest sort of cooperation between Brazil and the United States.

A big smiling Colonel met me at Natal. He asked, "Tired, General?"

I said, "A little."

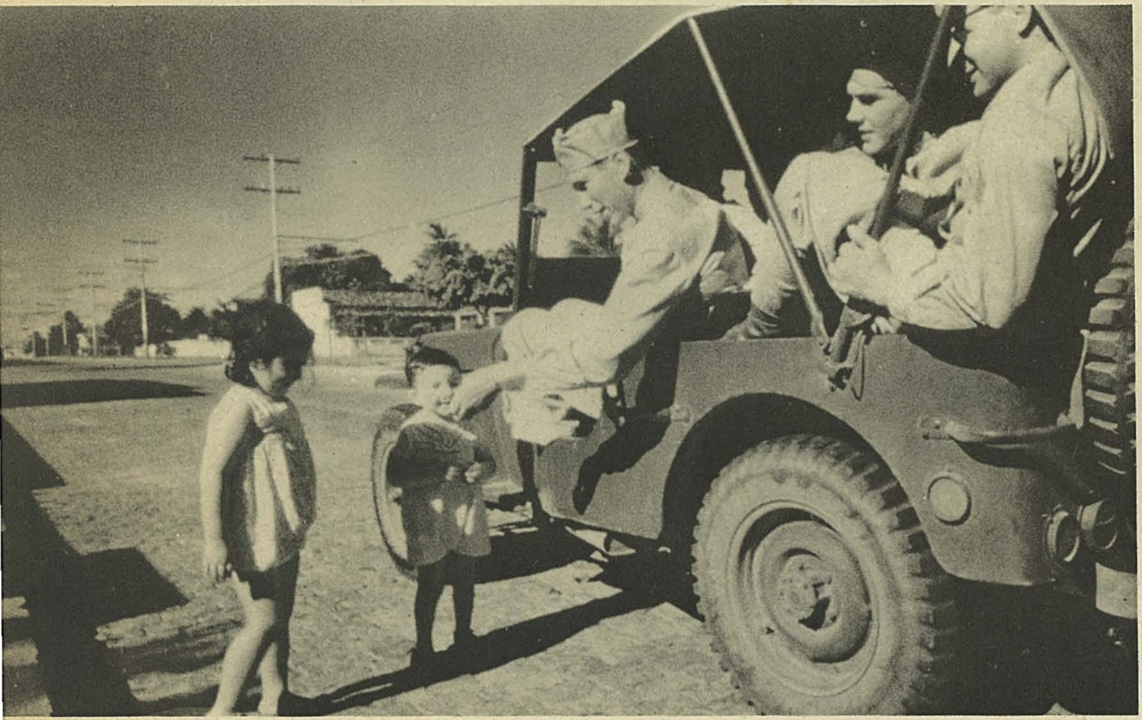
He said, "You will sleep well here. This is the finest climate in the world."

A real estate man or professional greeter in Florida or California couldn't have done it better. He really had something to sell, too. Northeast Brazil lies just under the equator, but the trade winds blow always in from the sea. The beaches are magnificent. This may be the Riviera of the future to many of our people with money in their pockets. Certainly it is to Mr. Johnson of Johnson's Wax and Fibber McGee and Molly. He has a carnauba wax plant and a house on the beach at Fortaleza.

The traffic through the Natal area is huge and picturesque. Most of it goes east, of course, in fighting planes. Some pursuit ships have flown the Atlantic, but the traffic is mostly in bombers — big and very big — and in transports.

The crews are eager and capable. They drink nothing harder than beer the night before they fly. They gamble gaily, as is the custom of soldiers. They see little of the people of the countries through which they pass; the High Command restricts them to the flying fields. However, a certain proportion will always remember the fruits, the climate, the beauties, and the courteous people of Brazil. Sometime, somehow, they will come back, as we Americans used to go back year after year to Hawaii, to the Riviera or to Paris.

In addition to the tactical crews, there are lots of interesting people travelling both ways. I met two captains en route who had served under me as sergeants—one in Texas and the other in Iran. At breakfast the next morning there was a colored Bishop with a Major for Aide who had been visiting our Negro troops all over the world.



Dmitri Photo

Our soldiers say hello to a Natal resident.

A film star of first magnitude went through just ahead of me. She wanted to give a show at one field where the plane bounced briefly. They told her that if she went out and turned cartwheels on the runways, it would be awfully nice for the mechanics working on the line; but they couldn't stop for a show — they just had twenty minutes for gassing up.

Our photographers got a picture of a flyer home from China wearing straw sandals on crippled feet, an American flag on the front of his flying jacket, and a Chinese inscription identifying him on the back. They asked him to smile but he said with tight lips that he couldn't. He had lost all his teeth in China.

I had breakfast with a French General, en route to Algiers with a one-legged Syrian Captain for an aide; lunch with a couple of our own generals on their way to England, and dinner with a delegation of the House Naval Affairs Committee. Another day I had breakfast with a lady bound mysteriously for Liberia; lunch with the Brazilian Minister of Air; dinner with two hundred men of a Service Squadron that works sixteen hours a day sometimes to push the planes through. That is Parnamirim Field at Natal.

Some of the boys who go out in bombers come back in transport planes later on. They may come back as litter cases — flown from the battlefield to a hospital in the United States in weeks, instead of the months that it would take by ships. These are generally special cases, for mass evacuation is still more than our planes can handle. Sometimes there are pitiful mental cases when a boy has broken under strain—and the best thing for all concerned is to get him out of the battle zone quick. Most of the officers and soldiers coming back—except the ferry pilots—have been a long while away. They talk sometimes among themselves of a girl in Algiers, or Italy, or a town in Egypt or India. They are not as young and gay as the boys going out to war.

The mass of the men going through Natal are our own men from the United States. But pilots and crews from all over the world come through this great base, too. There are planes from Canada, bound for Britain or the Mediterranean, with British crews from all over that wide Commonwealth. There are French crews—older than our boys — briefed by their own officers in their own tongue, who are flying American planes into the battle of Europe. More occasionally there are Russians, Poles or Chinese.

These are the people who move east or west. There are others — Americans all — who move north or south, to or from the United States. There are Brazilian airmen and Army officers going to and from our military schools. There is all the commercial traffic of Pan Air do Brazil, which passes through this busy base as normally as do passengers through LaGuardia Field in New York. Natal is very cosmopolitan today.

The freight is as interesting as the passengers. Only the most precious stuff can go by air. It moves into the freight warehouses smoothly. Modern machinery handles the great airplane engines for replacement as readily as sacks of mail and delicate radio parts. It is sorted into priorities. The first priority freight for Karachi, for instance, may half fill a warehouse one morning and be out over the Atlantic that afternoon. Spare parts, big and little, to keep the planes functioning, are all important. To carry them, the pilot may off-load – that is polite language for yanking off the plane – a couple of Generals, some ferry pilots and a lot of mail. There is the most extraordinary variety in freight as in passengers.

All this, of course, is transitory. Today, we are pushing the best that we have in manpower and in material out to the battlefields to the east. But the great airfields through which they pass are as fixed as the Rock of Gibraltar. The fields must be enormously important to Brazil in her future development, and they are important to us.

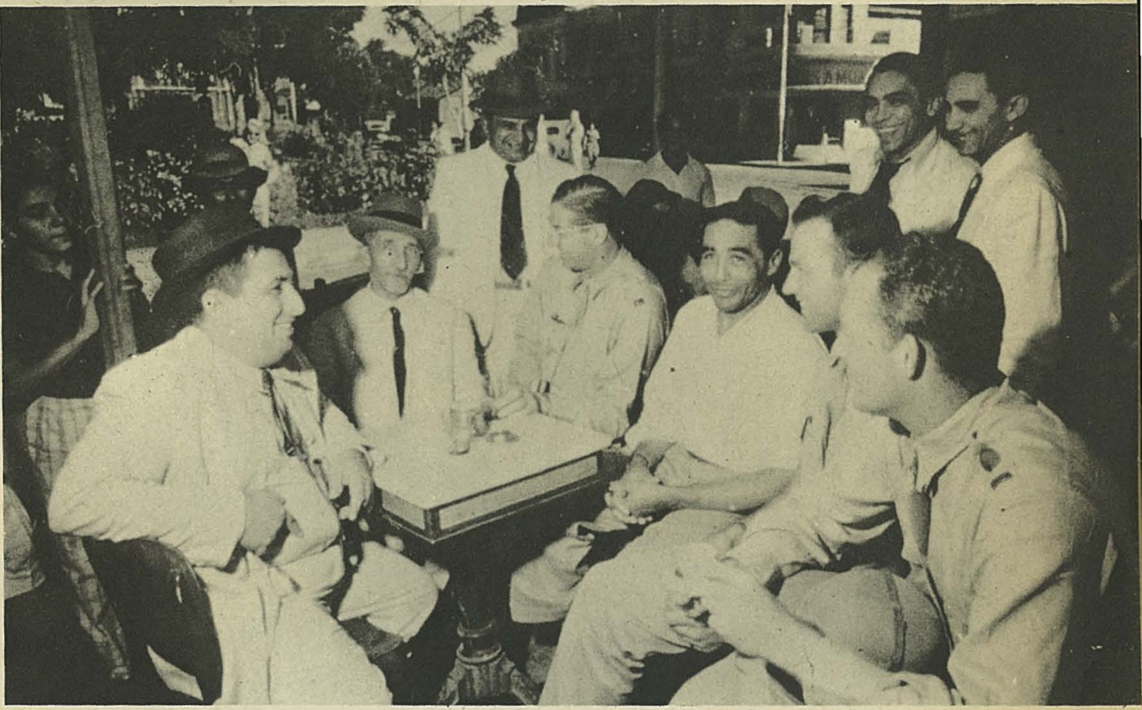
WHILE the name of Natal has taken on a new significance in the birth of cooperation between this country and Brazil, other Brazilian cities share in the work. There is Recife, the Venice of South America, with the headquarters of our Army and Navy forces there. A hundred years ago it was the center of the sugar industry of the world. There is Fortaleza, the port of the cattle country.

The day I got in, there had been one of those terrible accidents that happen sometimes. A big bomber with its crew of ten had crashed and exploded. The Brazilian Army moved in at once, fought the fire and picked up the bodies. They buried our dead that day with Brazilian soldiers as pall bearers on one side of the caskets, and ours on the other. Then the bugler sounded the Brazilian taps and our own. Soldiers don't forget this sort of thing.

Belem – the Portuguese name for Bethlehem – is another town which, standing at the mouth of the Amazon, is most important in air traffic. There are other vital bases at Amapa, Sao Luiz, Maceio and Bahia, the old capital of Brazil and one of its loveliest cities.

Working through these Brazilian bases, our Armed Forces are doing a grand work in promoting Brazilian-U.S. relations. They deal with those of highest rank and with those of none at all. This air route could not function as it does without the friendly support of military authorities in northern Brazil as well as in Rio.

In Air Transport, Major General Robert L. Walsh was long in command of the South Atlantic Wing, which extends all through northern Brazil. His Brazilian complement was Brigadier Eduardo Gomes, commanding Brazilian Air Forces there. Brigadier Gomes, as one of the Eighteen Immortals, the heroes of an early revolution, has a unique position in his country and has been a tower of strength in local Brazilian-United States relations. These two men showed how much two good soldiers can do when they work directly together. The primary job of the South Atlantic Wing is shoving planes through to war – and it is this sort of cooperation all down the line that makes things move smoothly. All through our fields and shops you find Brazilian mechanics trained in our methods.



Dmitri Photo

Our fliers like Natal's gay open-air cafes.

There is a saying "God is a Brazilian." It carries much the same meaning as "God loves the Irish." It gives some idea of the charm of a people so different from us. It was, of course, the Portuguese who brought the old world into Brazil, and Portugal was a little melting pot into which ran many strains of people from the earliest days. Through its ports and passes came Celts, Greeks, Carthaginians, Romans, Jews, Goths, Arabs, Moors and Africans.

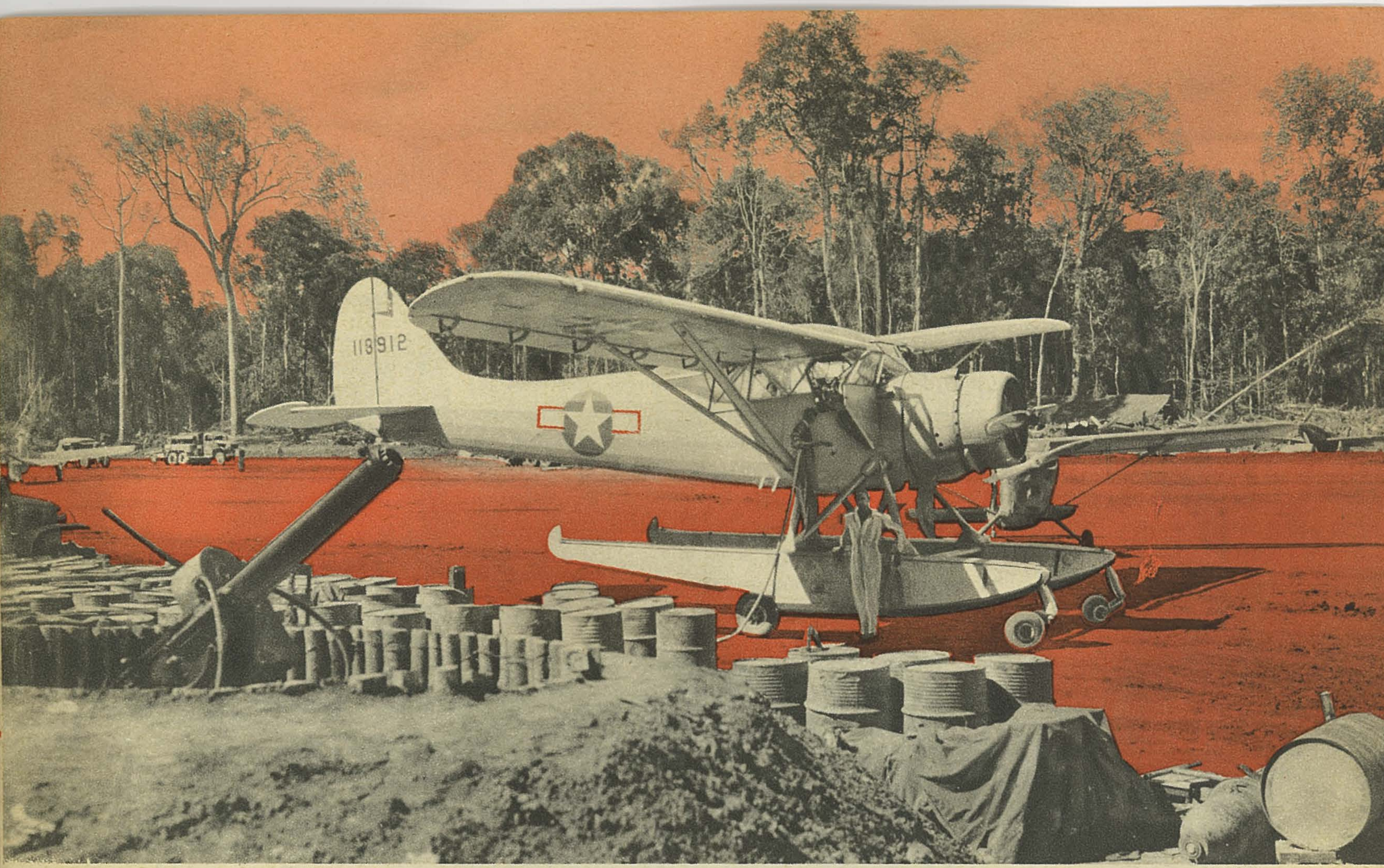
These men were the forefathers of the Portuguese, who moved into a Brazil of many Indian tribes, broke their resistance along the coast, and established colonies from the Orinoco to the River Plata. The early Portuguese colonists fought off the Spanish coming down the Amazon – the French around Rio – the French, Dutch and English alike in Northern Brazil – and took for themselves the largest single country in the Americas. They brought in millions of Africans to work the cane fields of Recife, the mines of Minas Gerais and the coffee plantations above Santos. They started boiling the greatest melting pot in the Western world. The great nation they founded has developed, and is still developing, vast resources over an area much greater than that of the United States.

In Rio de Janeiro, Santos, Recife and Belem, Brazil can boast of greater ports, with more important hinterlands, than the little city of Natal. But no place in the whole great republic is more important in today's history. It remained for the airplane and the birth of transatlantic air transport to make Natal a vital link between the two Americas. In this sense, the town has found its name newly justified.

THE NEW "VOYAGER 125"

Shown above in a wintry scene at St. Louis, you see the first post-war "personal airplane" to be announced by the Stinson Division of Consolidated Vultee. Called the "Voyager 125", it carries 3-4 people with baggage, cruises at 112 miles an hour, has a range of 470 miles, and is powered by a 125 h.p. Lycoming engine.

Production can begin as soon as war-time restrictions are removed, according to James C. Welsch, Stinson sales director. Those who saw it at the December meeting of the Aviation Distributors and Manufacturers Association in St. Louis were enthusiastic. Said a private owner, "It really jumps into the air. It can take off from any field." A publisher said, "It's the quietest airplane I've ever flown in, bar none." A distributor exclaimed, "It certainly can climb! Now I can get over those Rocky Mountains with ease." And the sales manager for another manufacturer remarked, "I see Stinson haven't lost their touch for coachwork. They always did have the best in the industry."



AAF Photo

Above, A Stinson L-1 in Burma, converted into an amphibious plane by the use of floats, and used for evacuating sick and wounded British troops.

PLANES FOR TIGHT PLACES

The Flying Jeep must live in the war zones through its deft maneuverability. It is a sort of David among the Goliaths of combat. Unarmored, it carries only a pilot observer and passenger. Sometimes the passenger is a gunner, sometimes a wounded soldier rescued from a battle area where no other plane could land. The Flying Jeep can take-off from a mid-river sandbar, can evacuate wounded from a jungle-torn clearing. While the Goliaths of the air war are making sensational news of the day, the little Flying Jeep—the Stinson L-5—is quietly endearing itself to thousands of our airmen. Here are some authentic stories about the way these planes are winning their laurels in the war.

IT was in New Guinea. Allied forces were advised through an Australian liaison officer that Japs were approaching a vital landing strip. Five Flying Jeeps were ordered to stand by to ferry Australian Commandos to the threatened area.

All hands turned out at 0500. Two hours later the planes, pilots and Commandos were off for the aerial trek. Each pilot was instructed to enter the valley at a two minute interval following the plane ahead. None was to land unless the lead ship landed.

At approximately 0755 the planes appeared over the designated strip. Circling the field, the fliers spotted an Australian. They decided it was safe to land. But in making the approach the door of each plane was left open to permit the Aussie Commando in the back of each plane to use his gun if necessary. All engines were kept running. The pilots were instructed not to leave their cockpits.

No ship was on the ground more than two minutes. Speed was paramount. The planes unloaded their Commando passengers without incident, got back to base. Seven trips of this kind were made by each plane, until all the Commandos required for the jungle operation against the Japs were delivered to the spot. The same planes were also used to bring to the Commandos mortars, ammunition and supplies.

The Commandos arrived in time to rout the enemy and kill a Jap Brigadier General. Four Jap prisoners were evacuated from this strip by the L-5s, a feat which was accomplished by tying the hands of the Japs and placing them on the laps of the Aussies who occupied the rear seats. A wounded Australian was also taken out. The vital airstrip was saved, and a letter of commendation was received by the unit from the Australian General commanding the 11th Division.

That operation is typical of the work being done in New Guinea by the little Stinson planes of the "Guinea Short Line," officially known as the 25th Liaison Squadron.

During just six months last year, the 25th Liaison Squadron flew 14,500 hours, and carried 12,500 passengers, 410,000 pounds of freight, mail, rations, and supplies. More than 65 rescues were performed and flights were made in assistance of 95 other rescues.

New Guinea is one of many jungle areas in which the Flying Jeep — otherwise known as the Stinson L-5 — is doing a job only a small, light plane can put over.

There was an emergency, for instance, in the mountains of Western China. In a world where horror is engulfing millions, it might have seemed a very small emergency. A young man far away from any chance of expert care was stricken suddenly with infantile paralysis. To the airmen who were friends of Second Lieutenant Robert Wesselhoeft, Jr., it seemed the most important thing in the world to bring him through alive. The paralysis was of the often fatal kind — affecting the lungs. The 27-year old officer was kept alive for 14 days with artificial respiration. Then they put him in a Flying Jeep, and got him safely out to a hospital.

The young Lieutenant had been stricken while on a ground mission engaged in photo mapping, in an almost uncharted area near the Tibetan border. It was some 100 miles from any airfield. Help was brought by radio, and the first AAF officers arrived by a tortuous trip overland through mountain gorges.

When they found it impossible to take the stricken man back by the same route, they used 250 coolies to build a small runway in three days, on an island in a river. A Flying Jeep was landed there, the back seat of the plane was removed, and the patient was laid on a platform in its place. He was equipped with a crude artificial respirator in the form of a canvas band across his chest. This was connected with a lever which the plane's pilot could pump up and down with his left arm, while operating the stick and throttle with his right.

In this way the pilot — not missing a stroke with the artificial respirator—cleared a 9,300-foot range with his 200-pound patient, flew the little plane through a terrible storm that once forced him to 15 feet above ground level, and got the paralyzed man back to his base. The next day the patient was flown in a hospital plane over the Hump to Assam, and thence to a hospital in Calcutta.

AAF Photo

An L-5 in Air Commando operations in Burma, with parachutes under its wings.

Major Fred G. Welsh, the pilot who made this remarkable flight, only a few weeks previously had flown the same little plane over the Hump from India to China.

The Flying Jeep, or Stinson L-5, was originally designed as a liaison plane — that is, a plane to do observation work with the ground forces. With small wingspan and a high degree of stability, the L-5 can take off from terrain impossible for most planes; and it can do so at an angle that permits it to use even a small clearing in a jungle. The plane has enormous power — a 185 h.p. engine.

The Stinson Division brought to the L-5 its pioneering experience in designing the L-1 (once called O-49) for the Air Forces, plus long background in building personal aircraft that had acquired a pre-war reputation for having almost unique stability and built-in safety.

At the beginning of the present war, many of these old Stinsons were pressed into service by CAP fliers to do jobs never even conceived when the planes were designed. They were even used, for instance, for flying out to sea, on anti-submarine patrols.

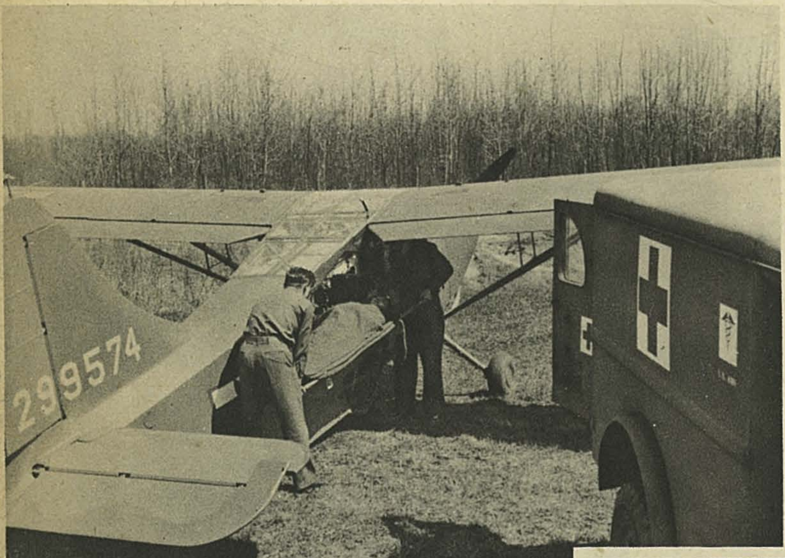
AAF Photo

An L-5 flies up a gorge between mountains on a mission over the Salween front, China.

Meanwhile the new L-5 was proving itself so versatile in the various war theaters that liaison work is now only one of its uses. It is being flown — particularly in the Far East — on almost any mission that requires air transport to a point where area for landing and take off is limited and hazardous for larger planes.

In Europe the Flying Jeep is primarily used to run messages between Army headquarters and various front line units. Interestingly enough, in a Flying Jeep outfit like the Air Corps liaison squadron of the Seventh Army, most of the plane pilots are enlisted men rather than officers. There is almost no kind of hurried non-combat mission into which the planes have not been pressed in emergency.

The L-5s have been used, for instance, to evacuate wounded from the front lines and rush them to hospitals. In Italy, a signal corps officer wanted to inspect telephone wires strung over the tricky Italian telephone system. An L-5 from a liaison unit nearby skimmed him over miles of poles in an hour, and he accomplished as much as he could have done in a week of ordinary ground inspection.



←At left, the Flying Jeep is being used to carry a patient.

The Flying Jeep can take off at an unusually abrupt angle.

Below, Lieut. Robert Wesselhoeft, stricken with paralysis, being flown in an L-5 with a respirator over his chest which the pilot operated.

AAF Photo

The Marines use Stinson L-5s in what they call their VMO squadrons, there being one such squadron to each division. L-5s observe the enemy, sending back information by radio; they make photographic hops; they make rescues; they serve both infantry and artillery. Usually the only weapons on board are the automatics carried by the pilot and observer; but there have been times when observers have carried carbines or Thompson submachine guns, spraying enemy ground forces as the planes dropped low.

The Flying Jeeps went into action on Saipan just three days after the Marine landing on this island, which will doubtless be one of our most important Pacific bases henceforth. They have done the same kind of work over many another Pacific island waste — on Peleliu, for instance. There the Jeeps were taken in on aircraft carriers, and flew off these carriers to scout over terrain so cut by knife-like ridges that it is almost indescribable. The Marines call part of it "Death Valley."

In a Detroit high school last year a tall Air Force Captain mounted the stage before the assembled pupils. As he started talking all the murmurs hushed. He said:

"I had been flying heavy bombers on reconnaissance missions in the China-Burma theater. One day, while over a vast area of jungle, we were suddenly attacked by six Jap Zeros. They knocked out two of our motors and a shell exploded right beside my seat. One of the fragments broke my hip. Several others entered my right side, one of them going through my lung.

"I was knocked out. My co-pilot took over and we made a crash landing through a network of jungle trees. We were down miles away from any friendly territory. Our radio man repaired the radio and gave our position to our base. In an unbelievably short time one of our planes was circling over the spot where we had come down. They dropped medical supplies and food and told us that about a mile to the north was a river and in the middle of this river was a sandbar on which one of the small liaison planes might be able to land. It would take me off to where I could receive the proper medical care.

"The rest of the crew made me as comfortable as possible and in a short time carried me to the river. They located the sandbar. It was only 20 feet wide and about 500 feet long. It was covered with waterlogged stumps and brush. Everyone worked hard for about two hours clearing it off. Then a tiny Stinson appeared over the tops of the trees. It circled overhead several times while the pilot looked the situation over, then he came in and made a perfect landing. They quickly loaded me into the back seat of the plane and made me as comfortable as possible. The pilot locked his brakes and gunned his motor, and when it was turning over at a great rate he released his brakes and just as we reached the end of the sandbar we were airborne. I was on my way to a base hospital.

"In an hour and a half I was on an operating table and my life had been saved."

The Air Force Captain stepped off the stage, amid a silence unusual in a high school auditorium.

The sequel to his story was that the students, assembled there for a war bond rally, went over their quota and sold over $100 in E bonds for each student enrolled. The students named and sponsored four Stinson L-5B ambulance planes.

SPEAKING OF AIRPOWER

To build even a single airplane requires scores of thousands of intra-plant communications. To build thousands of airplanes a year, in the many different cities where Consolidated Vultee plants are located, requires communications that are counted by millions annually.

One bottleneck to production was broken by Consolidated Vultee in 1944 by establishing a direct private-wire communications network which extends throughout the United States.

The need for the system became evident when work was begun on the new Dominator B-32s, early in the year. With plants and subcontractors scattered all over the country, company officials found countless valuable hours being lost each week in the process of sending and receiving vital messages *via* overcrowded public communications facilities. Then came along the proposal to lease private wires and standardize operating procedures throughout the organization. The entire network was established in a period of less than three months.

First line of the system — a Bell Simplex channel, extending a little more than a hundred miles from San Diego to Downey — was ready for service on November 1, 1944. The second and longest line — a Western Union Duplex channel, extending more than 1800 miles from San Diego to Nashville — went into operation only ten days later.

The system was complete on December 1, 1944, with four channels extending from the main-plant hub at San Diego. The last two channels were Bell Simplex and Duplex circuits, with wires running from San Diego to Tucson and Fort Worth, respectively.

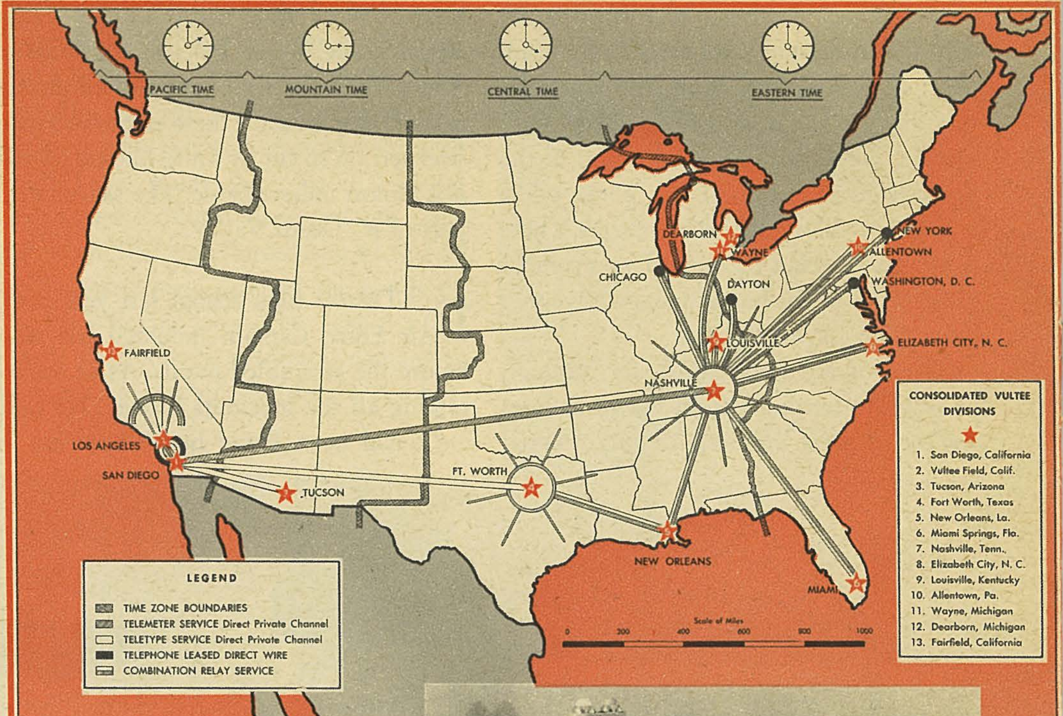
Although the system extends directly to only four key cities — San Diego, Tucson, Fort Worth and Nashville — it can be utilized by the company's subcontractors and representatives throughout the United States by means of a special relay set-up. For example, if an official at Elizabeth City wishes to send a wire to Tucson, the message is relayed (utilizing special switching equipment) through automatic teletype or telemeter machines at Nashville and San Diego so that it reaches its destination with but a fractional part of the manual handling formerly required.

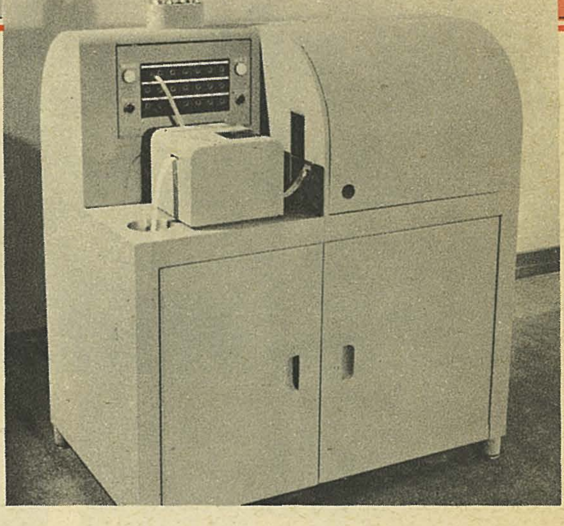
Due to previous transmission delays, it used to take from one to four hours to transmit a message from coast to coast. Today, thanks to the new communications system, a company representative at Buffalo was recently able to get a priority message through to San Diego in less than five minutes. Similarly, Nashville officials now find that they can send messages to Fort Worth *via* San Diego quicker than they can get a direct public-wire connection with the Texas plant.

Speedy message transmission is particularly important to Consolidated Vultee because the various units of the company are scattered throughout so many time zones. Before the new communications system was established, it was necessary for company officials on the West Coast to send all their telegraphic messages to the East Coast before noon (California time) in order to be sure that the messages would be received prior to the day's end (New York time).

This sometimes meant that as many as twenty-four hours would elapse before important orders could be conveyed to East Coast subcontractors. Consequently, shortages would later occur on West Coast assembly lines and much-needed airplanes could not be turned over to the Army or Navy on precise schedule.

With the new leased-wire communications system, the company's executives are able to take advantage of every minute of the day throughout the country; delays are avoided and costs are reduced; and Consolidated Vultee is able to operate more efficiently than ever before.





Above, the nation-wide spread of the Consolidated Vultee organization, with the key cities linked by direct wire. At right, one of the Bell Telemeter machines, used for automatic relaying of messages from various plants scattered coast to coast.

SDAM
48 50

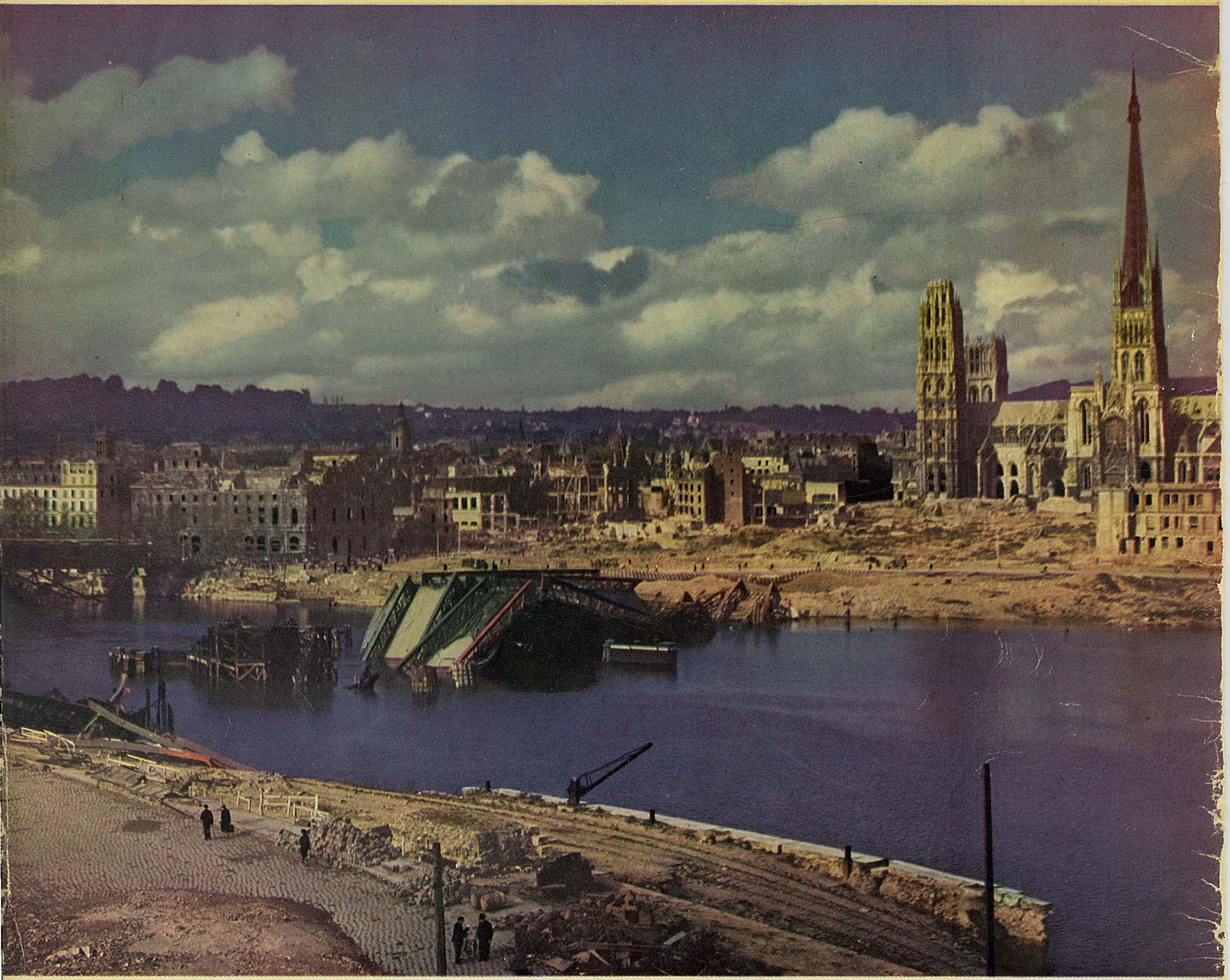
The screen version of Moss Hart's great stage hit—presented by 20th Century-Fox, in association with the United States Army Air Forces.

"Winged Victory" is the name given by the heroes in the film to the Consolidated Vultee B-24 Liberator bomber used in the picture.

MOSS HART'S Winged Victory

All profits from production and distribution go to Army Charities.

PRINTED IN U. S. A.



A.A.F. Kodachrome

RUINS AT ROUEN

Rouen is one of the great history-packed cities of Europe. Joan of Arc was burned there in the market place. The great Cathedral, so near the scene of her tribulation, is one of the world's sublime monuments bequeathed our time by the men of an unmechanized age. Rouen stands about half-way between Paris and the sea, on the Seine; it is a great port, because ocean-going boats can come inland as far as Rouen and unload their cargoes there for rail shipment to Paris. The Cathedral stands about half way between the river and the railroad station. The importance of Rouen as a port explains why this area had to be bombed when it was in German hands; you see here the ruins of one of the two main vehicular bridges across the river, and the surrounding demolition, partly by fire, which unfortunately had to destroy many historic old buildings. That the Cathedral still survives may be taken as a tribute to the precision bombing of our airmen, whose duty it was to destroy the usefulness of the port.

Plane Talk

MARCH · 1945

POST-WAR GOLIATH—204-Passenger Plane designed by Consolidated Vultee to cruise the world at around 350 miles an hour, which has been purchased by Pan-American World Airways for service on its most important trans-ocean routes. • See Story on Page 6

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SAN DIEGO PUBLI

Plane Talk

If you wish to share your copy of Plane Talk with a soldier in the war theatres, 1st class postage is required (15¢). You may re-use the envelope in which your copy comes to you by pasting on a label addressed to the APO number; seal the envelope. The magazine may be mailed, unsealed, to a U. S. A. address for 3¢.

MARCH, 1945 • CONTENTS • VOL. III, No. 2

PUBLISHED BY CONSOLIDATED VULTEE AIRCRAFT CORPORATION

We Appreciate the Letters

In the last two months literally hundreds of our readers have written us, in response to our New Year's note, to speak of PLANE TALK *— not formal letters, most of them, but long friendly talks on paper that speak of their boys in the war, their hopes for post-war America, their interest in what* PLANE TALK *authors have to say. We cannot possibly answer all these letters as we should like. But we do want every writer to know how greatly this enthusiasm is appreciated by the editors and the officials of Consolidated Vultee.*

The War in the Pacific

In this issue, as the European part of our war draws on to its inevitable ending, we are giving more space than ever before to the unfolding panorama in the Pacific, which some of our airmen have called the "Liberator Ocean". Whoever may settle the destinies of Europe, it is certain that the Pacific will for all the future be one of America's primary interests. Our military leaders have recently found it necessary to express concern lest our people be beguiled into making premature peace there. As Admiral Halsey phrased the problem, in referring to a possible effort by treacherous Japan to obtain a "negotiated" peace that would leave her still strong:

> *"They will begin to put out very attractive peace feelers. To my mind, that is the most dangerous period . . . If we do not demand absolute and unconditional surrender, we will be committing the greatest crime in the history of our country. They will merely use the peace, as the Germans did before them, to build up for another war."*

Our Covers

The handsome portrait of General Arnold, showing him in his new rank of five-star General of the Army, is reproduced from an AAF kodachrome on the back cover without imposing printing, so that it may be framed. The picture of the new 204-passenger plane which Consolidated Vultee is to build for Pan American Airways is reproduced from a kodachrome of a scale model.

Go West, Young Man
These pictures were taken by Staff Sergeant Joseph Silvering, to show America's young aviators arriving in the Pacific theatre 1

The Navy's Privateers
New airplanes — particularly new four-engined bombers — are important news for Americans nowadays. Here's a new Navy plane 4

Goliath of the Airways
Pan American Airways will use it to carry 204 passengers to London, surrounded by luxury, in just about nine hours 6

Blockade by Air
Lt. Commander F. M. Plake, USNR, tells you what Navy men are doing with our 14th Air Force in China to help sink Jap ships 8

Our Schools Have a Job Ahead
America is in the midst of debate over what's wrong with education. Lt. Harry B. Girdler tells an airman's view 12

Pacific Ploesti
Borneo is to Japan what Ploesti was to Germany. Lt. John R. Hiner reports on its bombing in a great Liberator mission 13

This Is Our Enemy
The Jap aircraft worker must be defeated, no less than the Japs who wear the uniforms of war. Here is how he works 16

Not Like the Movies
Lt. Richard C. Amidon destroys some possible illusions about life in the Air Forces, but still leaves it interesting 19

Spanning the Indian Ocean
Fred B. Barton went down to India to inquire about a vital link in Britain's round-the-world airway, and gives us the news 20

Air Line in Paradise
Captain W. P. Monan tells a story to enchant anybody who dreams of the days when planes will be used for peaceful ends 22

How We Got Our Ship
Lt. Walter Petravage was with a Liberator crew that did want at least one notch on its bombsight — but almost despaired 25

Back to Usefulness
Phyllis Gandee reports on one of the most important projects in the AAF — the rebuilding of young aviators who were hurt 28

At 65° Below
Alaska is already one of the most important air bases of the world. As a testing ground for airplanes, it is tops 32

Edited by Hill and Knowlton for the Consolidated Vultee Aircraft Corporation and published every other month. Text and pictures have been cleared for publication with Government authorities. Text of any article contained in the magazine may be reprinted with or without credit to Plane Talk. Copies of most pictures, except those credited to commercial news agencies, can be made available to editors upon request. While manuscripts are not solicited, first hand accounts of experiences by men in the air forces at the fronts will be given careful consideration. All correspondence and address changes should be addressed to the office of Hill and Knowlton, Room 3301, 350 Fifth Avenue, New York 1, New York.

SDAM
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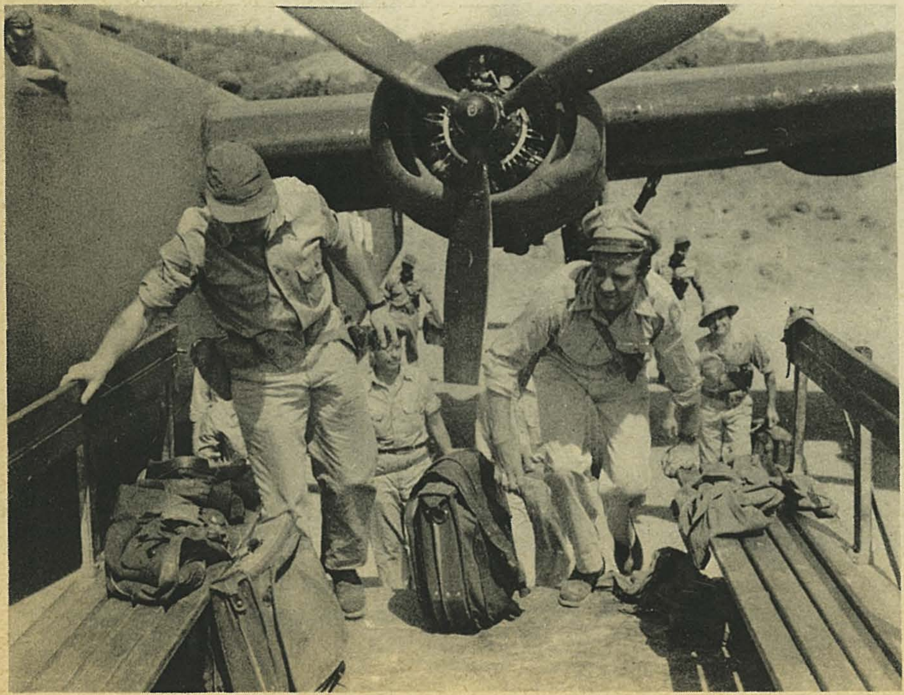
WITHDRAWN

Go West YOUNG MAN



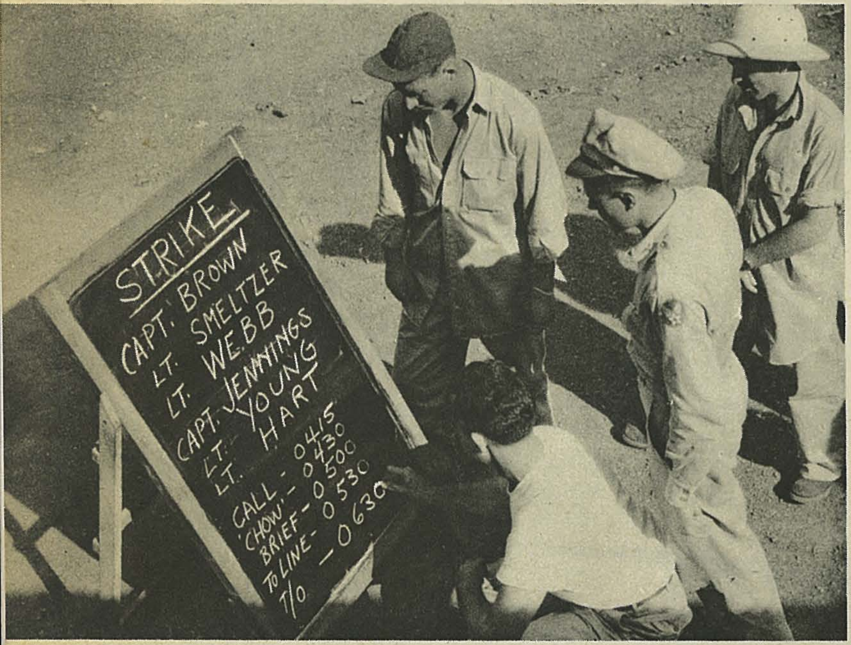
As we push ever nearer Japan – and the landing on Iwo Jima by the Marines, after our previous weeks of bombing, puts us within 750 miles of Tokio – fresh bomber crews are taking over from the flying veterans in the Pacific.

Some of the newcomers have been in combat in other theatres of war, some come directly from the states. Here is the story of the arrival of one new Liberator crew at a Pacific base, told in pictures by Staff Sergeant Joseph Silvering.

←««« At the left, just off the B-24 in which they have arrived, you see some of the crew clambering in the truck that will take them from the airfield to their camp. Now turn the page. »»»→

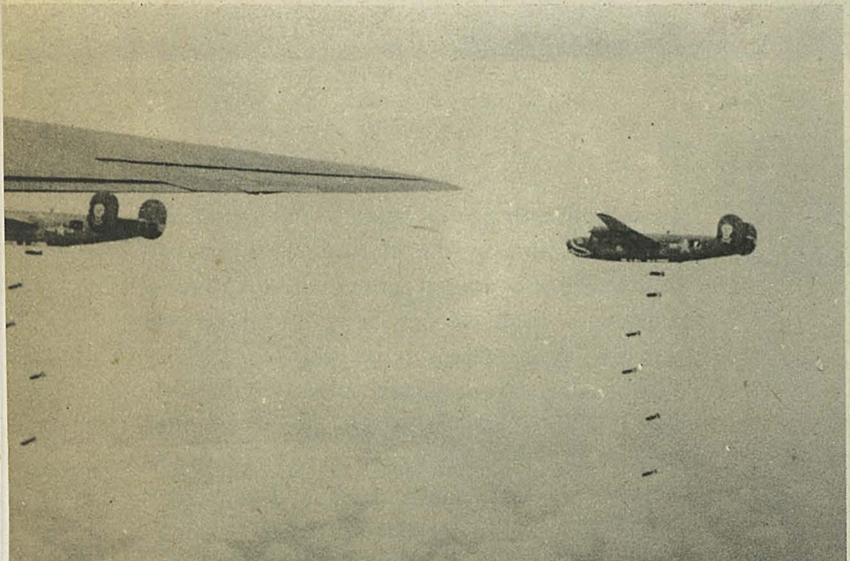
1 At their first meal, the crew give Cook Sergeant Johnson the latest dope from the States, meanwhile tearing into his chow.

2 Tents and cots are checked out from supply. Barracks days are over. No more spring mattresses. And if you want a wooden floor, you build it.

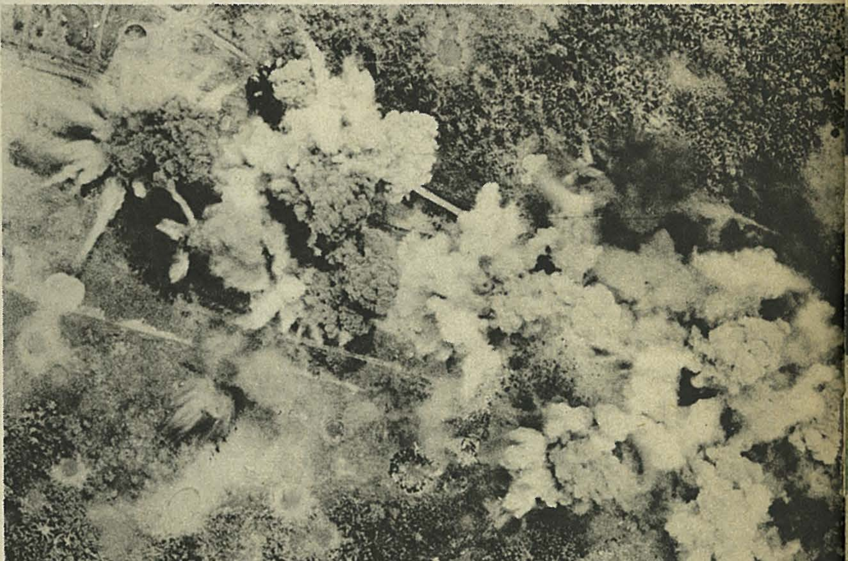


5 Now ready for their first mission, the pilot, the radio operator, and a waist-gunner study their tomorrow's schedule.

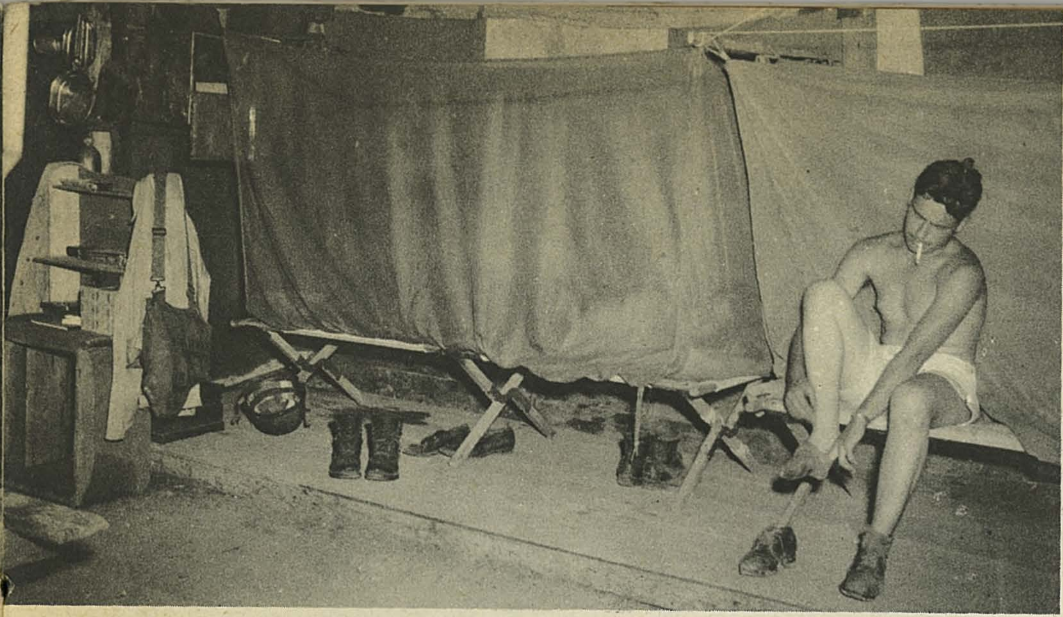
6 The ten members of the crew study photos of the target areas. Photographic maps are available in views from various heights and perspectives.



9 The target! The bombardier has taken over for the strike, and the Liberator holds a steady course for the call, "Bombs Away!"

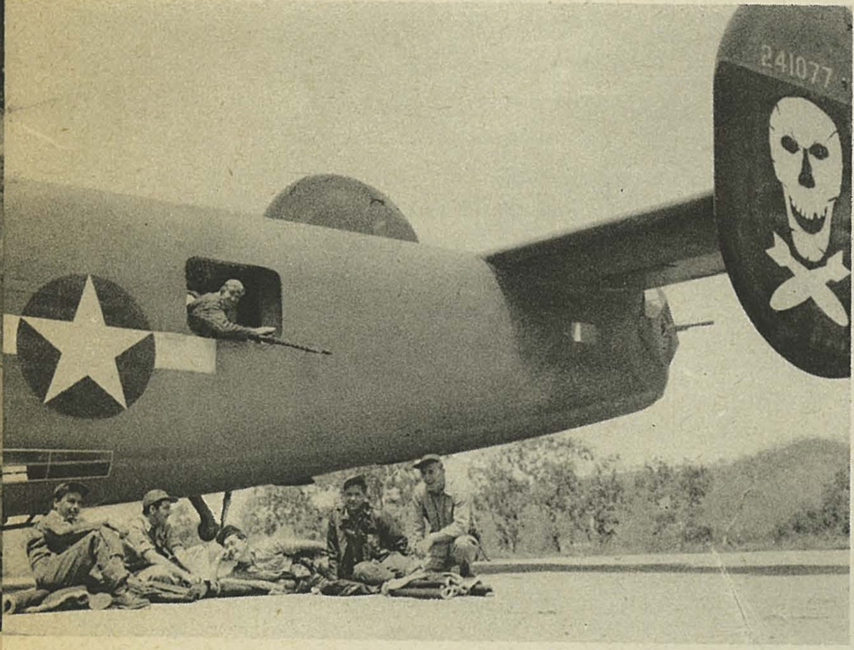


10 On the button! The crew know their stuff! Direct hits are scored on the Jap runway. But 35 Zekes are overhead. A running fight follows.

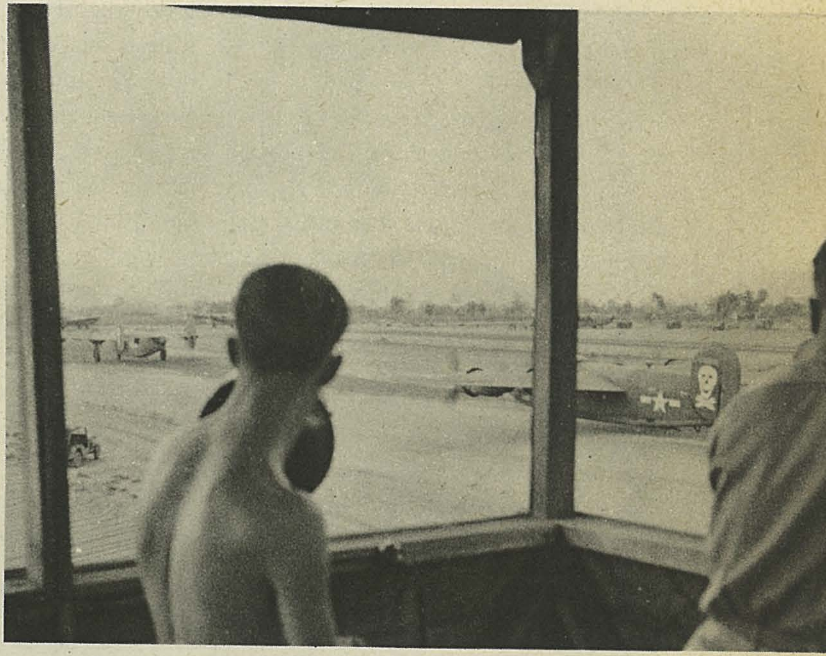


3 First night's sleep in the new quarters. Sleeping hereafter is done exclusively under mosquito nets. The atabrine ration against malaria becomes a daily requirement.

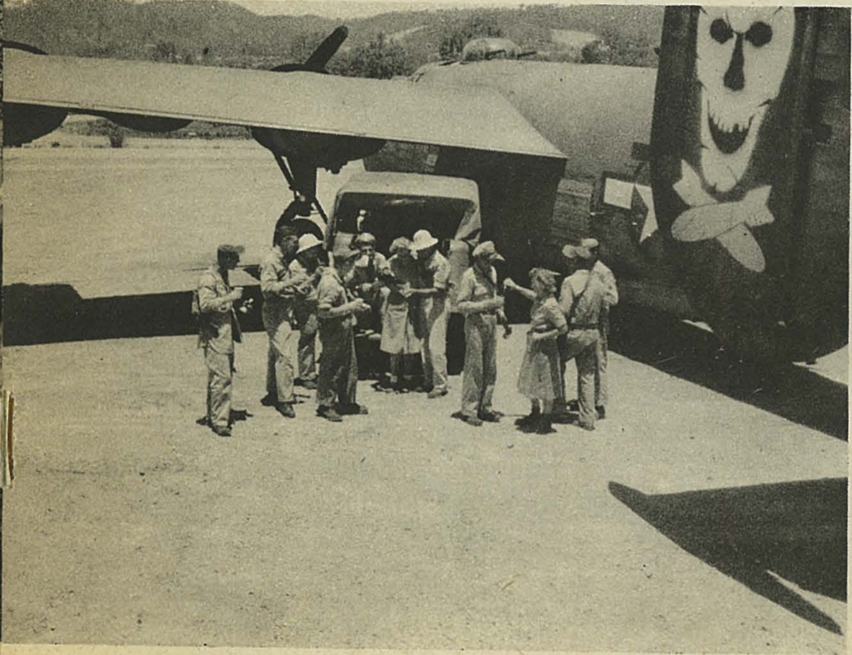
4 The new crew begins the first morning with a shower. Water is pumped from a nearby stream.



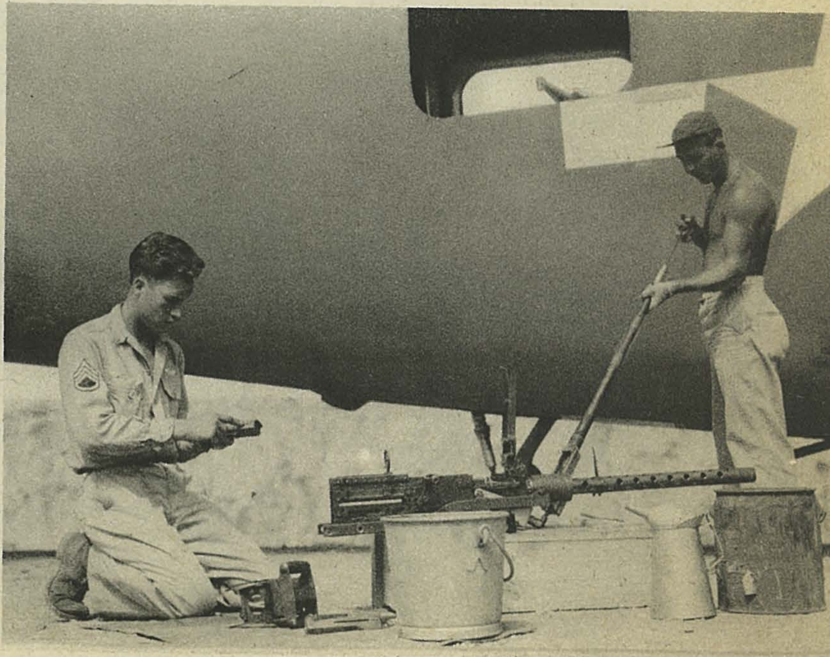
7 "Sweating out" the take-off—meaning to wait anxiously. The crew waits for the signal, while the waist-gunner makes a last check of his guns.



8 Now at last the signal for take-off comes from the control tower. Take-offs have to be made according to split-second timing.



11 They get rid of the Zekes in a half-hour's battle, arrive safely back at base, are welcomed by Red Cross girls with ice-cold "cokes".



12 For a first mission it was plenty hot. The gunners "renew life insurance". They clean the guns that downed three Zekes.

The Navy's Privateers

Announced to the public only in January of 1945, although it has been in secret production for more than a year, the Privateer is a powerful new land-based bomber which Consolidated Vultee is building for the Navy.

Its Navy designation is the PB4Y-2, indicating the second in a series. The first of the PB4Y bombers was a modified version of the Liberator B-24, and was called the Navy Liberator. The Privateer is an entirely new plane, resembling the Liberator only in its Davis high-lift wing. The Navy wanted a plane with greater search efficiency, more fuselage space, and a different type of armament.

Two contracts with Consolidated Vultee call for production of $85,000,000 of the Privateers up through July of 1946.

The Privateer is used for search and photographic missions, anti-submarine patrols, and bombing raids. Flying with a gross weight of 62,000 to 65,000 pounds, it has a maximum speed of more than 250 miles per hour. Its maximum flight range is considerably over 3,000 miles, and it is capable of staying aloft more than 20 hours. On normal missions the PB4Y-2 bomb bays carry 6,000 pounds of bombs or depth charges.

Technically known as a cantilever-wing monoplane, it has Pratt & Whitney twin wasp engines, a semi-monocoque fuselage, a single-rudder tail assembly, retractable tricycle landing gear, and twelve machine guns.

Probably the most striking feature of the PB4Y-2 is its single-rudder tail assembly, whose huge dorsal fin rises more than 26 feet skyward when the airplane is parked on the ground. Besides providing satisfactory balance, control and stability in all normal loading conditions, this empennage creates considerably less drag than the double-rudder tail assembly of the PB4Y-1. The fixed tail surfaces are nonadjustable metal structures, while the movable tail surfaces are aluminum-alloy frames covered with fabric. Controllable trailing edge trimming tabs are incorporated in both elevators and the rudder.

The Privateer's fuselage is more than seven feet longer than the fuselage of the Navy Liberator. It is a metal skin structure, reinforced with longitudinal stringers and transverse bulkheads or beltframes. It has six power turrets, each with two machine guns. Projecting from its nose is a power-operated ball turret, which houses two .50 calibre machine guns, and beneath this turret is a small compartment with a bombsight window for the bombardier.

Bulging from the fuselage tail compartment, which is aft of the bomb bays, are two side waist gun blisters and an overhead turret, each of which houses two .50 calibre machine guns. Another pair of .50 calibre machine guns are contained in a tail turret, which projects from the aft end of the fuselage directly beneath the rudder.

Besides being one of the most heavily-armed airplanes in the Naval Service, the Privateer carries more radio and detection equipment than any other production model aircraft currently known to exist. Two of the Privateer's eleven crewmen are required to operate this equipment in each airplane.

Photographic equipment installed in the plane requires a bay the size of one of the bomb compartments of a regular Liberator. The plane has heavy armor of such quality that even practically point-blank fire of heavy machine guns is rendered harmless.

Consolidated Vultee's new hot-air system is used to heat the cabin and to prevent airfoil icing conditions. This system employs exhaust heat exchangers to warm air, which is then distributed through ducts to all parts of the airplane.

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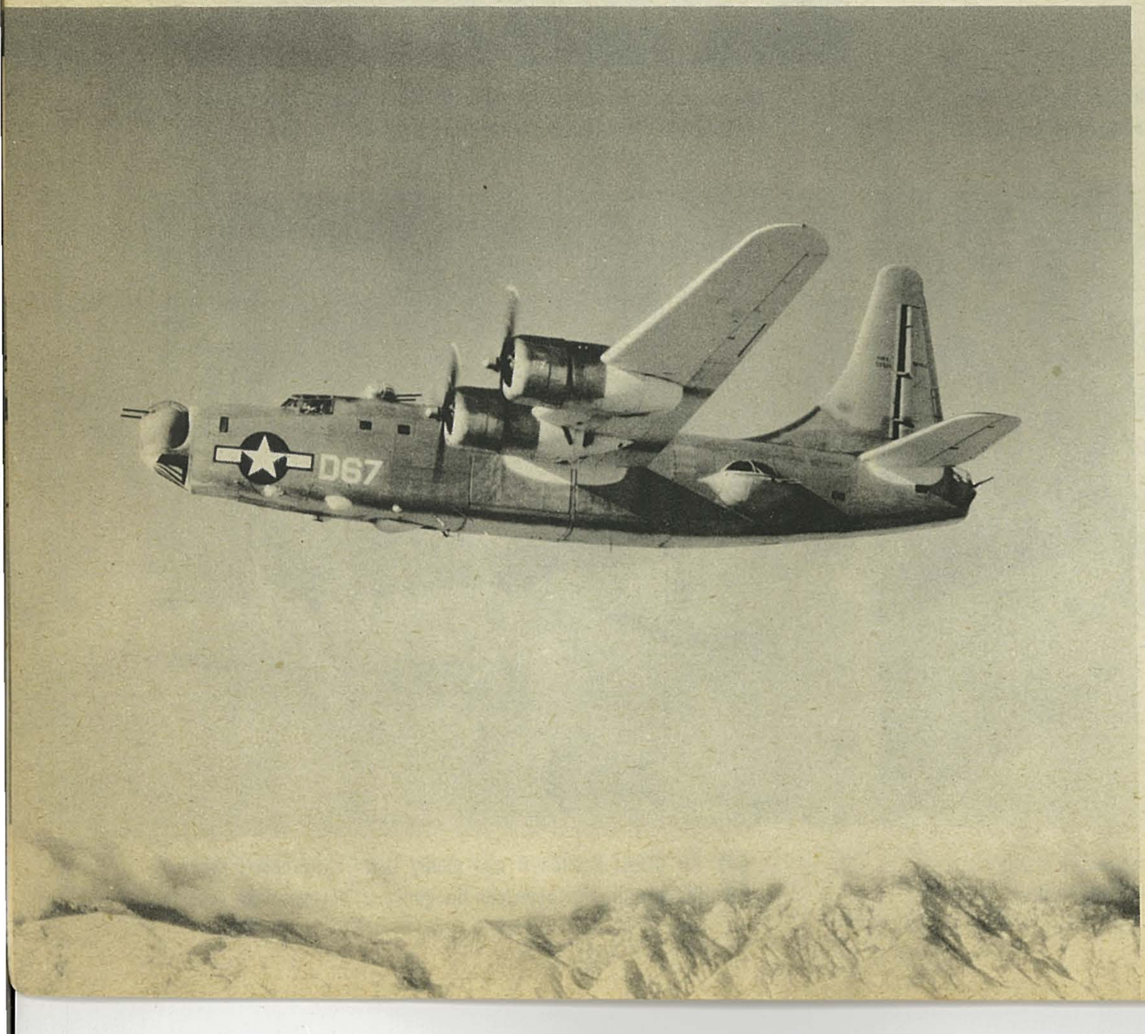
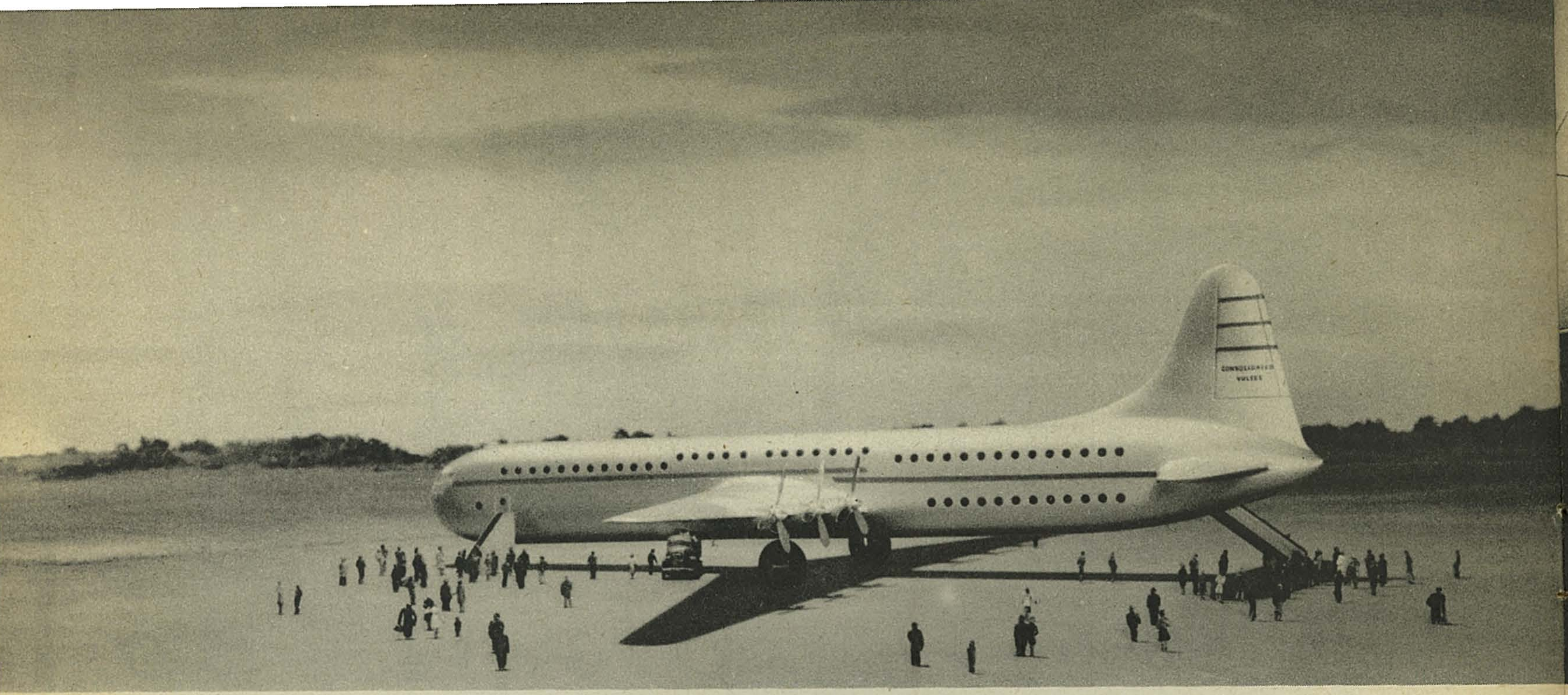


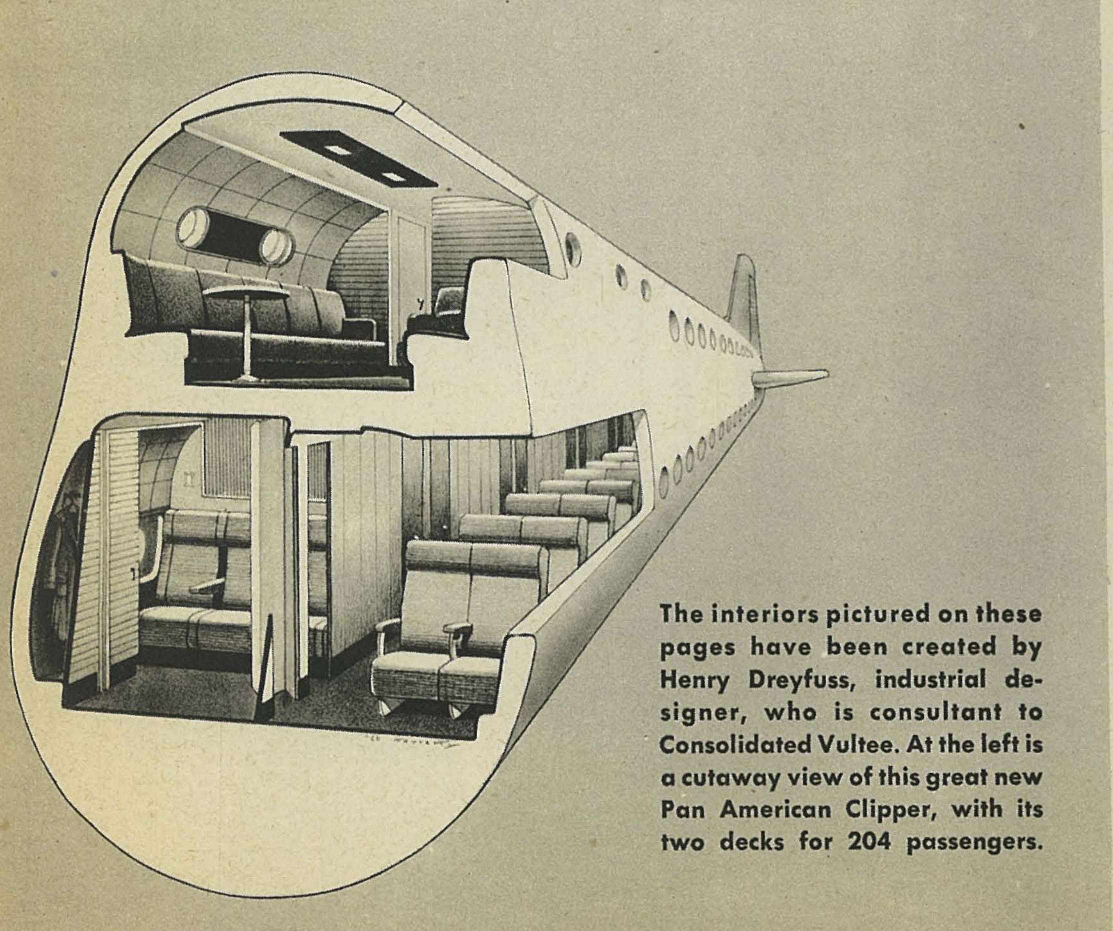
← Left, the powerful new Privateer is shown in flight. It has a maximum flight range of over 3,000 miles.

At the right, you see the new single rudder tail assembly. The dorsal fin rises more than 26 feet skyward, when the plane is on the ground. Bomb load is 6,000 pounds. →

PB4Y-2
NAVY
59507



Goliath OF THE AIRWAYS

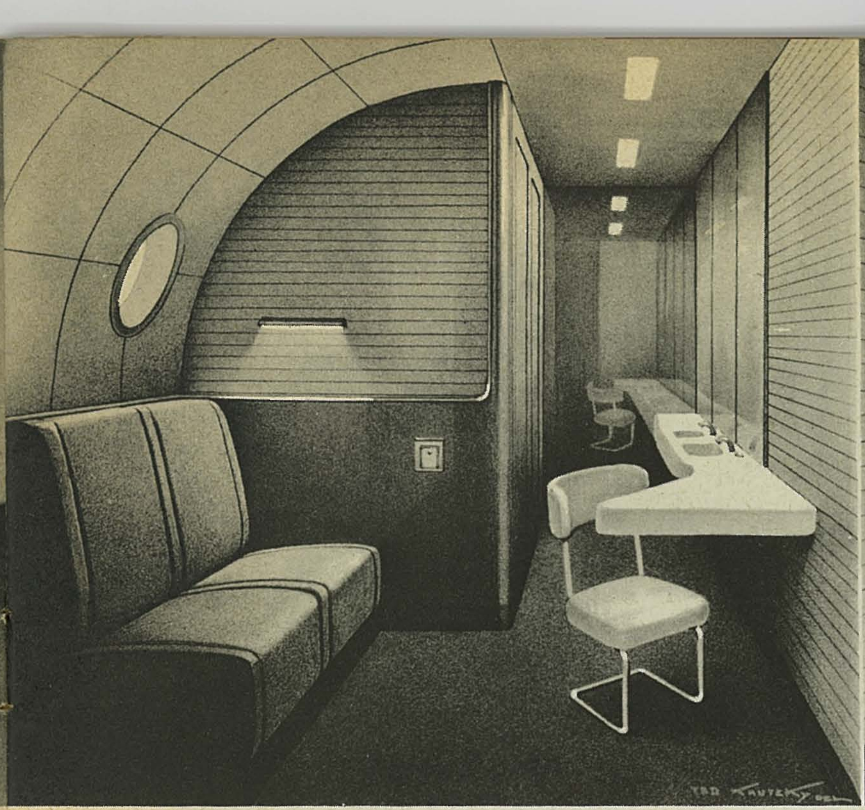


The interiors pictured on these pages have been created by Henry Dreyfuss, industrial designer, who is consultant to Consolidated Vultee. At the left is a cutaway view of this great new Pan American Clipper, with its two decks for 204 passengers.

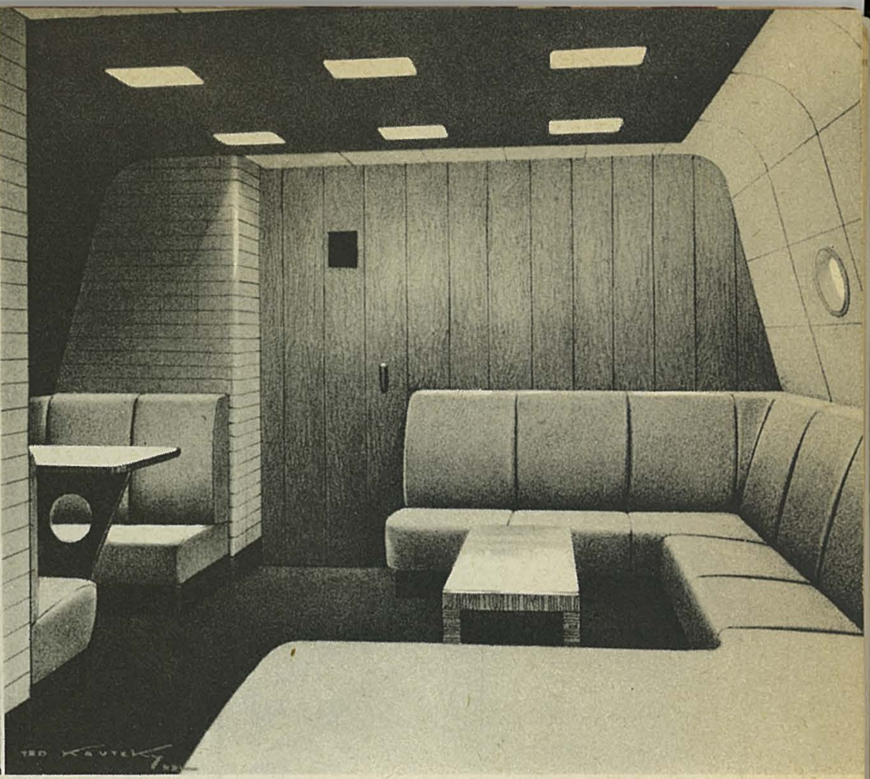
A FLEET of giant 204-passenger land-based Clippers, exceeding in luxury and size any transport aircraft yet proposed, is to be built for Pan American Airways by Consolidated Vultee to provide trans-oceanic air service post-war that will surpass anything ever experienced by air passengers. The contract for building these planes, announced in February, call for constructing as many as 15 of the huge Clippers — capable of handling 750,000 passengers a year in trans-Atlantic and trans-Pacific service.

The new Clipper will carry more passengers than any other plane in the world. It is 182 feet long and has a wing span of 230 feet. This wing span, more than twice that of the Liberator B-24, is equal to the height of a 21-story building. Weighing 320,000 pounds, the new airplane is twelve times the size of present standard twin-engined aircraft used commercially on United States routes.

Its cruising speed in trans-Atlantic service will approximate 342 miles per hour. Flight time from New York to London will be slightly more than nine hours.



This shows one of the retiring rooms, with luxurious appointments.



The lounges have deep upholstery, heavy carpets, recessed lighting.

Cabins will be conditioned for operation at an altitude of 30,000 feet, so that storm areas can be avoided.

The six engines with which the giant airplane is equipped produce power equivalent to 353 average automobile engines. In order to take full advantage of laminar air flow, the engines are mounted on the trailing edge of the wing and are equipped with pusher-type propellers.

Carrying a payload of 50,000 pounds, made up of 204 passengers plus 15,300 pounds of baggage, mail and express, the new Clipper will have a range of 4,200 miles. Because airplanes of such great size and speed require heavy traffic volume to realize maximum economies, Pan American plans to utilize them only on its long-distance, high traffic density routes.

The plane will be completely double-deck. Luxurious passenger facilities, complete with two lounges and a number of rest rooms, have been designed to take full advantage of the large deck space made possible by the plane's enormous size. Nine staterooms accommodating two persons each, and twelve berths, will be provided in one section for passengers who require such facilities.

Accommodations will include separate quarters for the operating crew.

Although the fleet cannot be produced until wartime restrictions have been removed, a full-scale model is complete and more than 90 percent of the initial engineering is finished. Pan American engineers have worked actively with Consolidated Vultee in development of the airplane.

Despite the plane's huge size, a single pilot will be able to handle it in the air.

Facts About The Model 37

The electrical system is equivalent to that used by a town of five thousand people.

The rate of fuel consumption at take-off is faster than a man could bail fuel out of a barrel with a ten quart pail.

The blueprints used to build this airplane would cover a sixteen acre field.

The wing tips may be flexed about six feet in a gust or during certain maneuvers.

The heating facilities are sufficient to heat a forty-room apartment house.

One of these airplanes could move as much freight in 9 days, between San Francisco and New York, as a freight engine with about thirty box cars.

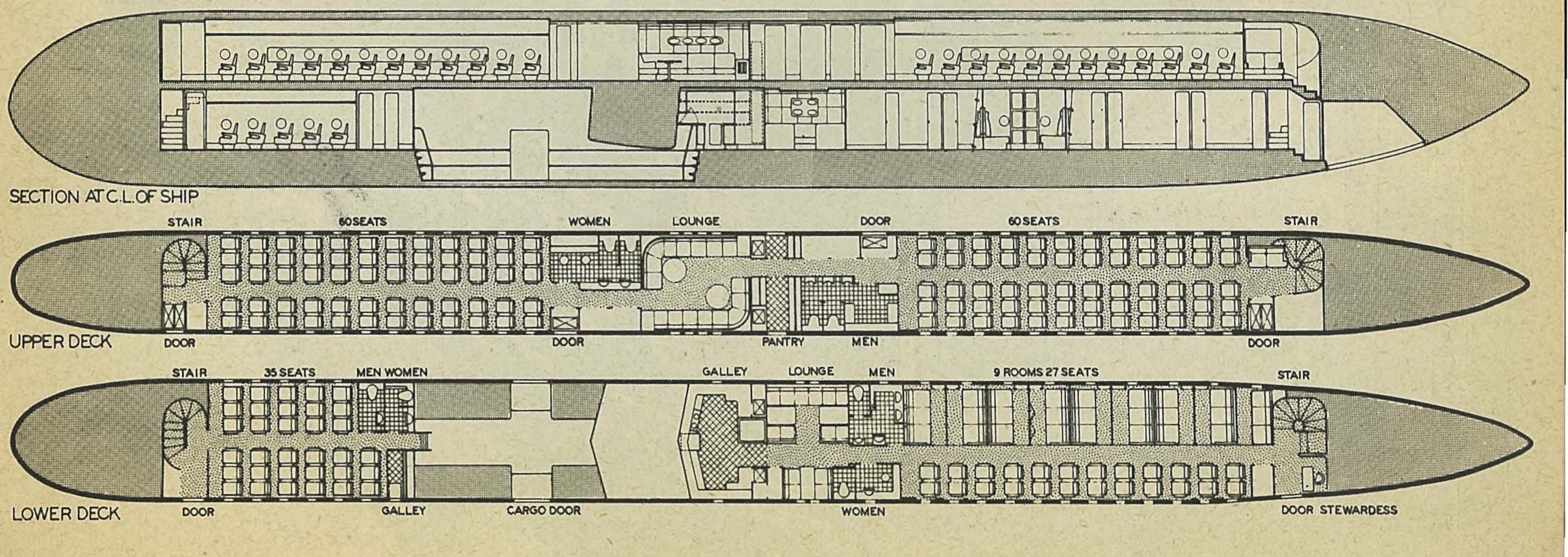
Each of the main landing gear tires is approximately one foot greater in height than the average ceiling in a home.

The tail extends to the height of a five-story apartment building.

The propellers extend higher than a two-story home.

A family automobile can be driven under the fuselage with ample clearance.

Pan American announces that the enormous capacity and high speeds of these new Clippers, designed to carry 204 passengers, will be translated into unprecedently low fares not possible with smaller aircraft. Below is an engineers' drawing showing a cross section and plans of the decks.



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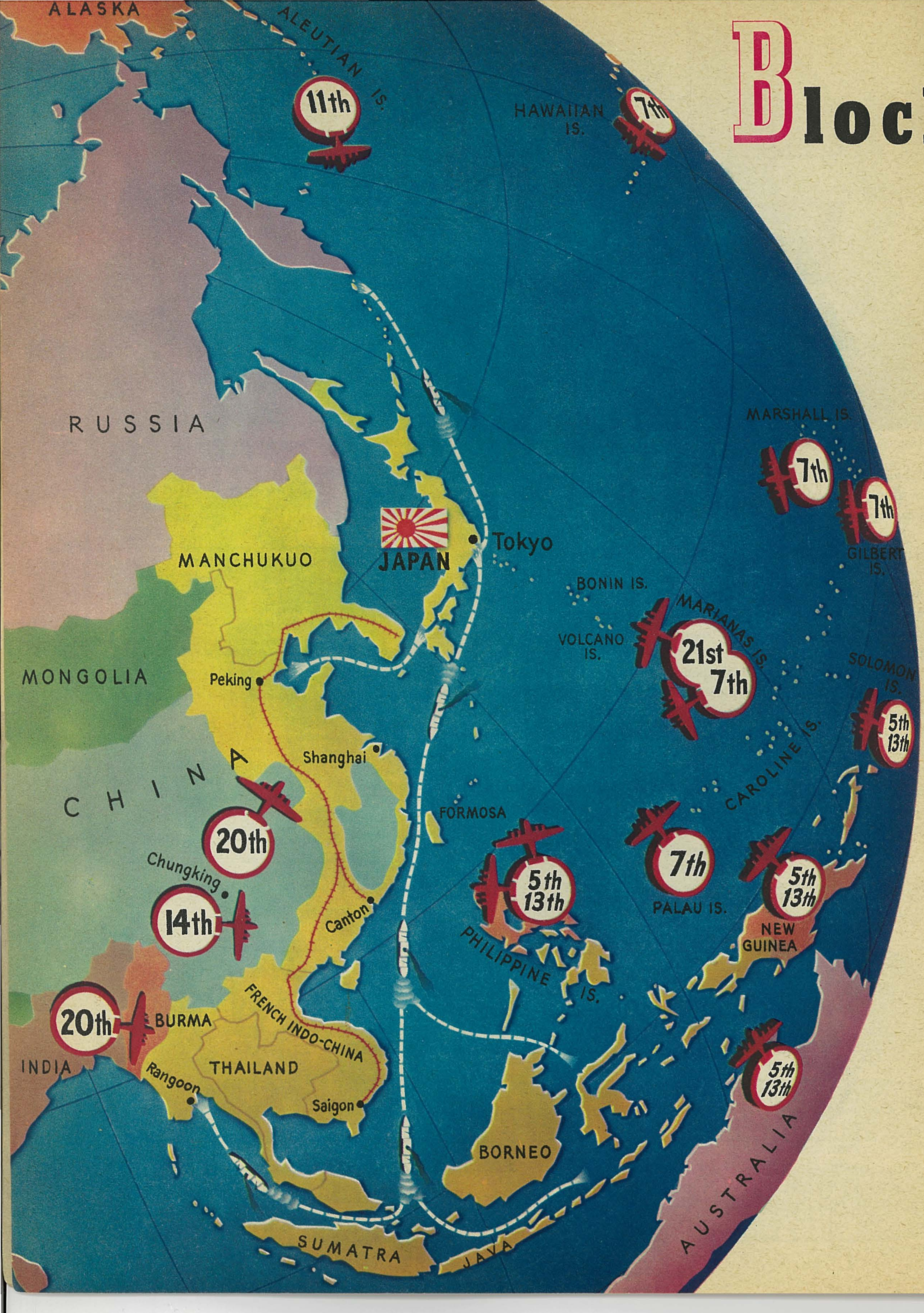
ALASKA
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11th
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JAPAN
Tokyo
BONIN IS.
VOLCANO IS.
MARIANAS IS.
21st
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SOLOMON IS.
5th
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MONGOLIA
Peking
Shanghai
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PHILIPPINE IS.
NEW GUINEA
20th
BURMA
FRENCH INDO-CHINA
INDIA
THAILAND
Rangoon
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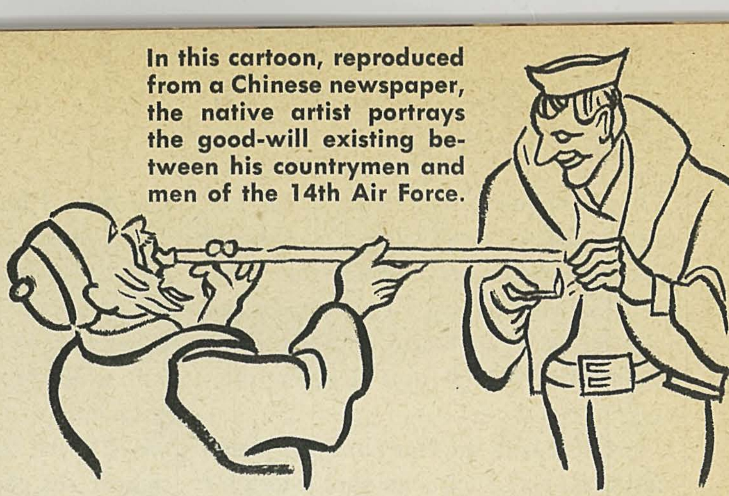
13th
BORNEO
AUSTRALIA
SUMATRA
JAVA

ade by Air

By Lt. Commander F. Marvin Plake, USNR

14th Air Force



In this cartoon, reproduced from a Chinese newspaper, the native artist portrays the good-will existing between his countrymen and men of the 14th Air Force.

I HAVE been privileged to see a great deal of the work of the Army Air Forces in the Pacific theatre — more particularly in China. I have heard the exclamation many times, "What! A Navy man in China?" The answer is to be found in the Navy's liaison work with the Army Air Forces, in drawing the noose of blockade around Japan.

To understand some of the most effective work of the 14th Air Force, you must realize one of the revolutionary turns that airpower has given this war. In previous wars sea blockade was almost exclusively a naval job. Today the airplane is one of our most effective weapons for disrupting enemy shipping. The Army's bombers play their part in this just as the Navy's do.

That helps explain why many of our Army Air Forces have a handful of Navy men assigned to them for liaison work. The Navy has nothing to do with piloting the Army planes, or with their bombing operations. You might say that the liaison job is to help the Army pilots find the Jap ships.

A bomber on the hunt must often fly for hours over monotonous stretches of water — something many an Army pilot did not anticipate when he entered the Air Forces.

In our liaison work, we chart the sightings of enemy shipping made by both Army and Navy observers; we help determine the ships' routes, so the air crews will more readily find the targets; and we try to help the Army men better identify and describe what they have seen when they come back.

Identification of craft is often peculiarly important. That is an essential part of the Navy man's training. Most of us attached to an Army Air Force have done our time at sea. We know most of the weak spots in various types of ships.

Shipping strikes have been a major assignment for most of our Army Air Forces in the Pacific ever since the war began. The Japanese octopus lives on two-way circulation. Manufactures and troops must flow down the tentacles from the home islands; raw materials like oil, rubber, rice, must flow steadily back to the homeland. Interrupt this circulation, and decay of the organism sets in.

This is naturally a prime undertaking of our Navy, which has been sinking and damaging Jap ships at the rate of 50 a week since the middle of last year. It is also a task shared by all our Army Air Forces in the Pacific — with the exception of the 20th and 21st whose super-bombers concentrate on long-range land targets.

People tend to think of Liberators in the Pacific as chiefly important in bombing hostile bases; in strategic attacks on enemy industrial centers, railroads, docks, oil refineries; in missions designed to reduce some island fortress so we may capture it. "Liberators strike Iwo Jima again," read the headlines week after week, before we softened the defenses sufficiently to seize this fortress that is so near to Tokio. Those are the spectacular missions. But the routine attacks on Jap shipping are equally important, softening the Jap for the kill. Thus our previous disruption of Jap shipping vitally aided our conquest of the Philippines. Our repossession of the Philippines, in turn, has given us bases that will enable our planes to cut off Japan almost completely from her southern empire.

WHAT IT MEANS TO THE JAPS

In the darkness the coastline of the island is barely visible. Shallow waves break quietly. Not a light is visible. Then a hundred yards out, a red light briefly flashes a signal in code. In the glow a submarine hull is revealed. A moment's wait and there is an answering flash from just beyond the beach. Small figures scurry down to the water, and soon three dark barges head out to the surfaced submarine.

The Japs are bringing in supplies.

When your supply lines are hacked and chopped and struck at every day, when your freighters and transports are daily blown out of the ocean, then you desperately resort even to submarines, and to long lines of towed barges and sampans that were never made for ocean travel.

That is how the Japs continue to supply their outlying garrisons, struggling to save the Jap life-lines that are slowly but inexorably being cut by the Allies. Already approximately ninety thousand Japanese troops on the Solomons, New Britain and New Guinea have been left to their own resources. Supplying them is now impossible. They live on berries, coconuts, native fruits.

Jap losses have come so prohibitively high that most of their supply work in the South Pacific is now done at night.

— LIEUTENANT WALTER PETRAVAGE

THERE are Air Forces with more planes, but none with a tougher heavyweight division than China's Fourteenth. Our Liberators in China have been doing a job to which Admiral Nobutake Kondo, Commander in Chief of the Japanese Fleet in China, could well testify. The B-24s of the Flying Tigers have done plenty of damage to his ships off the China Coast. Between March of 1944 and January 1945, the Liberators sank 395,342 tons of Nip shipping and probably downed another 109,315 tons. Our biggest prize package was the Conte Verde, Italian passenger liner of 18,500 tons. It was sunk by two direct hits from a lone Liberator which sneaked in over the Hwangpu River near Shanghai, where the Japs were attempting to salvage the ship.

Major General Chennault's Air Force has always been popularly thought of as a "fighter outfit." Since pre-Pearl Harbor days the names of Chennault, Vincent, Hill, Olsen, and Mahoney have been making the headlines for China.

But the bomber boys of the China Liberators deserve equal fame. You should also know the names of fellows like Carswell, LeVan, Koshiek, Farnell, and Capt. John Shytle, bombardier, who alone has accounted for 42,035 tons of enemy shipping.

In China both the crews and the planes must be tough. Living conditions at forward bases are anything but pleasant. Everything has had to be flown over the Hump, vast Himalayan barrier between China and India. This is no simple feat in itself. Spare parts are few and far between. The ground crews in China have a tough time. So do the flyers.

To know what they go through you might like to hear about one of the 14th's heroes — Major Horace S. Carswell.

One of his feats won him the recommendation for the Congressional Medal of Honor. It was on the night of October 16th that a six-ship convoy was picked up by one of his crew. The Japs were about midway between Hong Kong and Takao, headed for the Formosa port. Carswell turned the plane over to the bombardier to direct the first run, which was aimed at a destroyer identified as one of the new Terutsuki class. Two direct hits and two near misses resulted; this ship could be chalked up as destroyed.

The Major was not content with one ship. Unmindful of the terrific ack-ack barrage that was being thrown up, he ordered another run. This was to be a low one, less than a thousand feet. The outcome was two direct hits, and one near miss, on another cruiser of the Natori or Kuma class. The cruiser folded in like an accordion. The explosions threw the bomber into the air, shaken as a terrier shakes a rat. The plane was in a tail-up, nose-down position which called for the combined strength of the wiry Texan and his co-pilot to regain control.

An hour and twenty-five minutes were spent in this battle altogether, and Carswell's sinking of two warships with a Liberator that he got home safely is still barracks talk among the China crews. But Carswell — like some other heroes — did not live to wear the medal his feat earned him. Here's what happened:

Ten days later the Intelligence Officer told Carswell of an eight-ship convoy in the South China Sea, southwest of Hong Kong. He flew out to seek it. The eagerness with which he went out on his last mission is typical of all the Liberator pilots and crews in the China theatre. When finally sighted, the convoy had grown to one of twelve ships, including two destroyers.

The first run on a destroyer came as a complete surprise to the enemy. The bombing resulted in a 20-foot near miss — close enough to claim the "can" as damaged. Thirty-five minutes later a second run was made through intense ack-ack — anti-aircraft fire — on a 350-foot freighter. Two direct hits probably destroyed the ship.

The picture below, reproduced from a snapshot by Corporal Edward Nowak, Jr., shows a dance staged by airmen of the 14th Air Force, at General Claire L. Chennault's headquarters. One of the Chinese girls in the picture, Ming Chen, is the daughter of a Chinese general. American girls on duty in the area also attended in force.

Below, Liberators are being attacked by phosphorus bombs dropped from Japanese fighter planes flying in clouds overhead.

AAF Kodachrome

During the last wild melée, two engines were shot out and a third was hit and sputtering. The hydraulic system was gone. So was the number two gas tank.

The B-24 staggered above the water, barely visible in the night. Everything with any weight whatsoever was thrown overboard and the plane was scarcely under control. For height had to be gained, if the Liberator was to get home to base. The East China terrain is rugged; the mountains to be crossed are high. As you know from the newspapers, the 14th has lost many of its bases to the Japs. We must fly far inland to reach home.

But the highest altitude Carswell's Liberator could reach was 4,000 feet — not nearly enough for return to base. Even this height was gained only by climbing to a stall, then diving to pick up speed for another climb.

The coastline was finally reached at 3,500 feet with two engines out and a third damaged. One hour later, long before a friendly field could be found, that third engine was failing and the plane began to go out of control. The order was passed to bail out in parachutes. Many of the crew did get clear, in time, and it was from them we learned the story. Before Carswell and his wounded co-pilot could hit the silk, the plane crashed into a mountain.

The Liberator was their funeral pyre. That is the way heroes have to be prepared to go.

But sometimes, when out looking for enemy shipping, our Liberators have some exhilarating sport. Last year, for instance, two B-24s flying a South China Sea reconnaissance sighted a Mavis. This is one of the Japs' big four-engine flying boats. The Mavis tried to climb to cloud cover. But one of the 24s got in between the Nip and the cloud while the other Liberator pressed the attack, making passes which the pilot had been taught in a fighter school.

Such fighter tactics, rather novel for a Liberator, proved the complete match for that

A Liberator of the 14th Air Force comes home to its Chinese base after bombing Jap shipping. Reproduced from a painting by Lt. R. S. Reeves, USNR.

Mavis. The enemy fell to a watery grave.

We have some famous planes in the Fourteenth, as well as famous flyers. Fight crews look on their planes as almost animate things, you know. "Sherazade" is one of the Liberators we still talk about.

She was attacked by a large formation of Jap fighters. One of the Oscars tossed a 20-mm which burst in the cockpit. It killed the pilot and wounded the co-pilot. But the gunners, although taking a lot of shrapnel, stuck it out. "Sherazade" was riddled with holes from nose to tail, but she accounted for three Jap fighters, and limped home.

"Chug-A-Lug" is another Liberator which put up one of the game fights that are making aerial history over the eastern seas. With hydraulic system, flaps and brakes shot out, with the tail turret inoperative, the tail gunner killed, and ammunition short, the brave survivors still accounted for six certain Jap fighters and another probable one. Flyers still tell that story over Chinese chow and say, "What a plane! What a crew!" And they mean it.

To do things like that our planes must be tough, and they are; and so are the crews — they are Americans you can take pride in. But don't make any mistake about the job that still lies ahead of them. As General Joseph W. Stilwell has said, "We have to kill 10,000 Japs each week just to keep the population stationary." That is, half a million more Jap males are born each year than die. We have hardly even begun to kill Japs yet.

OUR Schools HAVE A JOB Ahead

By
Lieutenant Harry B. Girdler, A.C.

Lieutenant Girdler, who at 24 holds the Distinguished Flying Cross and Air Medal with four clusters, is a Liberator Navigator with 40 missions to his credit in the Asiatic theatre. He is the nephew of the Chairman of the Board of Consolidated Vultee, was recently home on leave.

THE schools in the United States are doubtless going to take a lot of punishment when fellows like me leave the service. For several million of us will probably be heading straight back to the class rooms about the same time. All of us have learned a lot of things that many teachers and professors never heard about — things that are the difference between life and death.

So there is bound to be quite a tug-of-war between the professors and the veterans — over what's important and what's not. If the professors try to give us the same old stuff we got in class rooms before we went into the Army, they will face some rebellion in their audiences.

It's not that we were taught the wrong things in school. There's nothing wrong at all with English and Spanish and Algebra and American history. We need to know those things. History, particularly. The more history we know, the better it's going to be for us and for the whole world. And things like Greek and Latin are probably fine to help train your mind. So is a Zero boring in at 10 o'clock.

The real problem is not going to be subject matter, but the way it is taught — if past teaching habits continue. Pre-war, most of the civilian teaching was purposeless. We just learned to pass written tests because there were always written tests to pass. We learned relatively little—and took a long time doing it.

Teaching in the Army is different. Its purpose is always clear. You'd better learn fast, if you want to *go on living.* Civilian schools, like Army schools, must develop a purpose, too — a reason for staying in business. That reason should be to fit students for life as it is. It ought to be understood that you'd better learn fast, if you want to *enjoy living.*

I was luckier in my pre-war schooling than most. I at least got some foundational study. I went to public school and to a military academy and to a naval academy. Then I had a year and a half of study in liberal arts and science in college before entering the Army. The most important course I took in those years — as it eventually proved — was a year of celestial navigation. They now teach the same course in a fraction of the time in the Army. But it did give me a head start.

The point is that I could have learned many times as much, in those years, if the professors had known as much about teaching methods as they knew about their subjects.

This thing of learning a subject in a fraction of pre-war time is strictly G.I. The Army doesn't sit you in a class room day after day for a certain number of hours a year, and then claim you must know your stuff just because you have gone through all those hours. The Army has a study technique. It works like an old-fashioned cram session, but makes you remember what you learn.

The results we have been getting show it works, and in a mighty fast way. It has converted civilians into technical fighting men in less than a year, then put them out to operate efficiently over some of the toughest areas on the globe. Nor has it taught them merely techniques. By teaching them languages, history, and cultural knowledge required for human contacts in various nations, it has made them citizens of the world.

This G.I. system of instruction isn't likely to end when the war does. Most everybody I know of in the Army takes it for granted that there will be universal training in this country in peacetime.

Suppose every young fellow is given a chance at 18 months' military training between high school and college. (Incidentally, most of us in the services think this would be wonderful for the men as individuals and the nation as a whole.) If such universal training is instituted, Army methods of training are going to seem normal to every youngster in the country. The schools will certainly have to change their instruction methods in order to keep up.

I have talked with a lot of officers and enlisted men about education — we all like to bull about what we will do when we go back into civilian clothes. I think everyone I have listened to said he wanted more schooling.

There's a reason. Pretty obvious to all in this man's Army is the fact that the fellows who know most about war business get to the top of the ladder. When you have that drilled into you for three or four years, you are pretty likely to think that it also takes trained brains to get ahead in civilian life.

So almost everybody I've heard talking wants that same kind of extra training for civilian life which helped bring us back alive from missions. The G.I. Bill of Rights will make it possible. I hope the colleges are getting ready for the rush.

What I hope, even more, is that our professors have found out that men used to the airplane are used to getting places. This is no age for jogging around on a horse, if you have any goal in mind at all.

PACIFIC PLOESTI

By
Lieutenant John R. Hiner
Fifth Air Force

AAF Photo

Jolly Rogers Liberators, with their skull and cross-bone insignia, leave Balikpapan aflame.

THIS is the story of the Ploesti of the Pacific, climaxed by what ranking Air Force officers have termed officially as the "perfect strike." It is the story of the Liberator men who bombed the huge Jap oil center at Balikpapan, on the northeast coast of Borneo.

Producing nearly 40 per cent of all the aviation gasoline that is now available to the Jap war lords, Balikpapan for months has been a "must" target for Southwest Pacific Liberators. Borneo is oil rich, not only at Balikpapan on the East Coast, but also at Lutong in the West.

Lutong is now under Liberator attack, too. Last December, for instance, a single Liberator of the 13th Air Force, piloted by Captain Robert D. Wallace, did so much damage there with its bombs that the refinery and storage tanks were still burning fiercely when our reconnaissance planes photographed them six hours later.

First developed by the Royal-Dutch Shell group of companies in 1907, when the original refinery was erected under Daniel Pyzel, the Borneo oil fields were prime booty of war for the Japs when they overran the Netherlands East Indies. American industry had put down the foundation for the most complete oil refinery outside the continental limits of the United States. Like our scrap iron, this oil was now turned against us.

Hence far-off Borneo became a lucrative and highly strategic target for our Air Forces — but a target which just couldn't be reached in the early days of the war. Then American forces slowly crawled up along the north coast of New Guinea, carving painful miles from the heat and the mud and the jungle. Finally their advance carried them to a small coral island in the Netherlands East Indies.

That put Balikpapan and the rest of Borneo in range.

Bombers of the Fifth and Thirteenth Air Forces were alerted for the task. It was to be a long 2700-mile round trip, requiring nearly 17 hours in the air. It would be the largest, concerted, coordinated aerial attack since the famous Hollandia strike.

The normal bomb load of the B-24s making the run was greatly reduced to accommodate bomb bay tanks of extra gasoline. Four thousand pounds of bombs nestled away in the bomb bays of each Liberator.

Leading our dual air force strike against Balikpapan was the oldest Liberator outfit in the Southwest Pacific. Self-named the

Jolly Rogers, who call themselves "The Best Damn Heavy Bomb Outfit in the World," this Liberator-flying unit of the Fifth Air Force has been in the Pacific since September, 1942. They flew the first B-24s over Rabaul, Hollandia, the Celebes, the Halmaheras and the Philippines. They felt right at home leading this blow against Balikpapan.

With the reduced bomb load, every strike had to count. The Jolly Rogers planned to "pin-point" the target, selecting the most important production units of the Balikpapan field. Targets selected included the Edeleanu plant, where aromatics for high octane gasoline were manufactured; the sulphuric acid plant; the oil drum factory, and the big Pandansari refinery.

Pin-pointing targets is nothing new to Liberator bombardiers in the Southwest Pacific. And the Jolly Rogers are old hands at it. Veterans of 8,000 sorties, they have sunk or damaged half a million tons of enemy shipping with pin-point bombing, shot down more than 400 Jap interceptors.

Briefing for the Balikpapan strike was held in headquarters the night before take-off. The intelligence officer was speaking.

"Our target for this show is the Pandansari refinery. Other outfits will follow us in. We are supposed to have fighter cover — and will that be a surprise to the Nips! But the cover may not be at the rendezvous on time. If the 38s aren't there, you can't afford to wait. You'll have to go in without escort. You'll need every drop of gasoline you can carry to get back.

"About the target area. There's a battery of heavy Jap flak along . . ."

The Jolly Roger camp had been humming now for two days. Planes were put in perfect condition. Autopilots, bombsights, a host of other instruments, were all checked to function flawlessly.

Technical representatives of American plants producing their equipment were on hand to untangle knotty maintenance problems which might arise. Ray Condon, Honeywell autopilot representative, was there. So was Jack Head, Norden bombsight. So was Les Crawford, Consolidated Vultee's representative in the field.

Line crews worked feverishly through the late afternoon putting the finishing touches on the Liberators. A few had been tough. Night came and the planes still weren't tagged "perfect." There could be no mistake, no tiny mechanical imperfection, no matter how minute, that might impede the success of the strike.

Lights were rigged and work was rushed to completion on two remaining Libs. Unheralded heroes of many air battles, these linemen had put in a 15-hour day — most of it under a burning tropical sun. Finally the line chief turned to his GI mechanics.

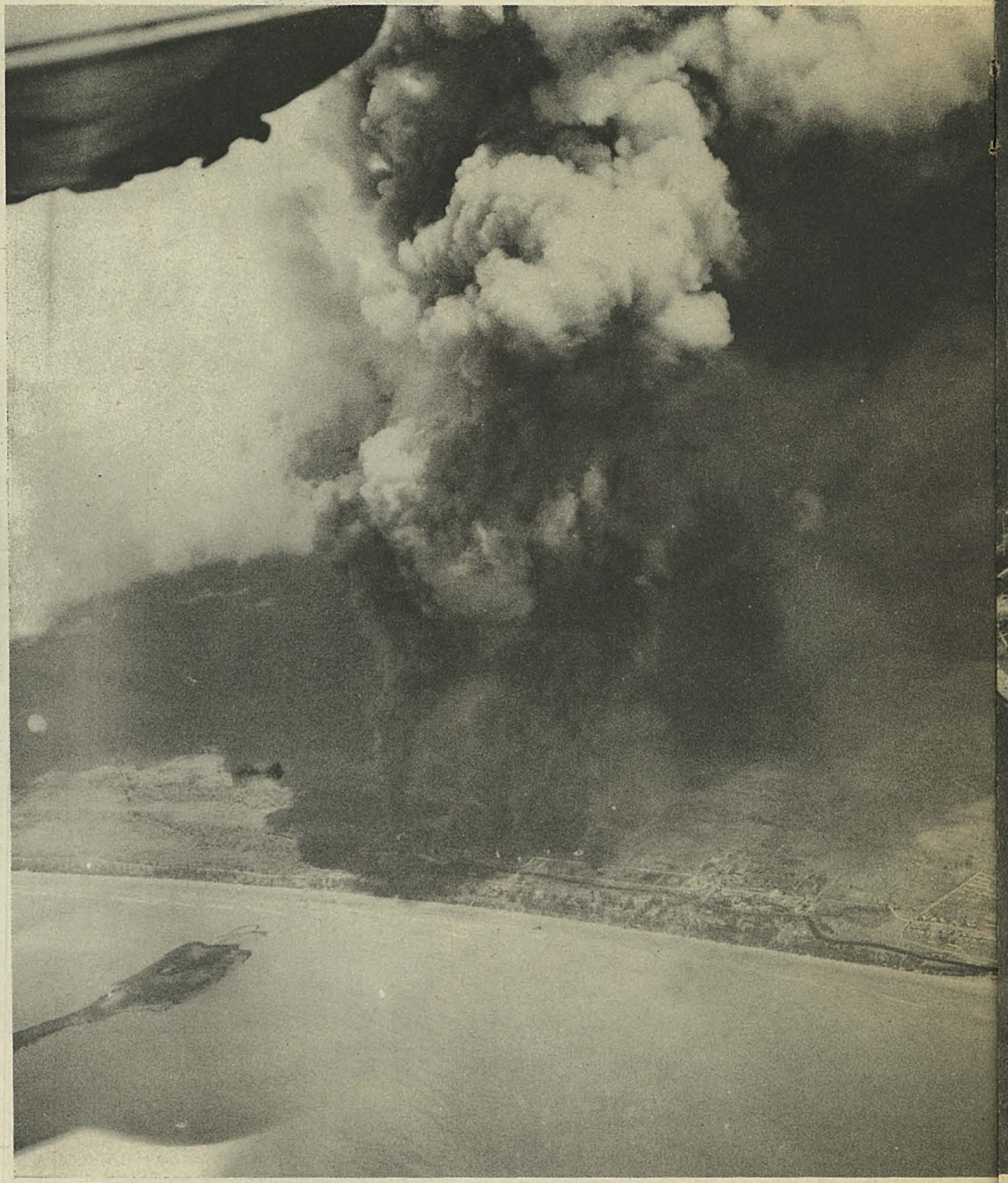
"That's it, fellows. Better get a bite to eat and some rest. This show starts at midnight."

Liberator's Les Crawford tells the story of the take-off.

"The boys weren't nervous, but they were tense. It would be a tough strike. They all knew it. They wanted to be on their way.

"They stood in small groups around their planes, lighting cigarettes, taking a drag or two, tossing them away, only to light up again.

"Finally they took their places. Pilots sat grimly behind the controls. Maybe some wondered if the huge tires would withstand the more than 70,000 pounds gross weight that would grind into the coral strip at 120 miles per hour. Maybe some prayed that the 53 inches of mercury planned for the take-off would make them airborne before the end of the runway was reached. Just beyond was the Pacific. That manifold pressure would have to turn the trick."



AAF Photo

This is a recon photo of Lutong, taken six hours after its bombing by Capt. Wallace's Liberator.

This was the heaviest night loading of Liberators in the theatre of operations.

Crawford goes on.

"At 12:45 the Jolly Roger flight leader started his engines, turned on his position lights, and started to move down the twisting taxiway to the strip. Other engines roared, more lights blinked on. Promptly at 1 a. m. the flight leader gunned his engines, checked his Liberator momentarily with his brakes, then started rolling down the silvery coral into the night. He was gaining speed. As his engines attained full power, the end of the runway loomed ahead. Slowly the B-24 lifted into the tropical sky.

AAF Photo

This is a Jap oil storage tank on Bonjoe Island, near Borneo, just before the 13th AF fired it.

"Every 37 seconds another Jolly Roger Lib followed. And 20 minutes after take-off we could hear them high overhead assembling in formation."

They were on their way.

Seventeen hours later they were back. Soft rays of the late afternoon sun danced on their gleaming silver wings as they circled the strip in formation. One by one they came in. Trucks sped them back to their camp area. The colonel and a group of his staff officers retreated to the quiet of his quarters.

A tall, soft-spoken Mississippian, the colonel is a striking man. He found cold bottles of Aussie beer in the depths of a gleaming white refrigerator. Incongruity in the South Pacific. He filled glasses, lighted a cigarette.

"Well, it was the perfect mission; the best mission the Jolly Rogers have ever flown.

"When we took off this morning we went into a loose formation, and nothing happened for six hours. Then the right wingman spotted a Nip. Crews took their alert positions. Discovery of our formation by the Jap recco chilled any hopes we had for surprise over the target.

"We closed formation and waited. The recco had disappeared. For another hour nothing happened. We were nearing the target area when all hell broke loose. Jap flak peppered the sky. They were coming close with their flak — heavy and accurate.

"Then we were jumped by 30 to 40 Zekes. A running fight was on. It started as we turned in for our bomb run. The interceptors pulled off to let their flak throw it up at us. We held the same course for the run. Our bombardiers turned the bombs loose. Then flashes of fire and flame obliterated the target area.

"How the boys put 'em there, I'll never know. Flak had us rocking like a cork on a rolling sea as we made the run. Black smoke rolled up to 15,000 feet.

"Then the Zekes were on us again, dropping phosphorus bombs from above our formation. They were uncomfortably close. One Nip was flying off our right, giving them our altitude.

"They dove in and out of our formation, trying to cut one of us off. They didn't have much luck. Our tight formation with concentrated fire power brought down 16 of them. We didn't have time to count the probables.

"Their gasoline supply getting low, so the Nips finally turned back. We settled down for the long trip home.

"And, as you can see, here we are," the colonel finished, opening another bottle of beer.

That strike against Balikpapan was an early one. On later missions more damage was done that should take a long, long time to repair. By the time repairs are finished — if the Libs will let them finish — it may be too late.

Such a bombing run in the Southwest Pacific area dwarfs European operations, not in numbers of planes involved, but in distances flown, preparations necessary, and the peculiar risks involved. It is strikes like this one against Balikpapan — long, hard, arduous strikes — that are reducing Japan's resources of empire, and weakening her for the day when we can move in for the kill.

This is our ENEM

Japan is conditioned by earthquakes to disaster — and the explosive fire of our bombings is not unlike her earthquakes in results. This is the burning of the Japanese Die

By Howard Snyder

Mr. Snyder for many years was a lecturer on research in industry, at the Japanese Imperial University. He has travelled widely in Japan and in China, returned to America in 1943.

WORKERS in American aircraft plants, living in crowded towns where existence is a constant battle, may think their lives are hard. They could not even imagine the conditions under which Japanese aircraft workers labor and endure life. Our enemy still intends to win this war. There is no sacrifice Japanese workers will not make to attain that end.

Do you want to know the nature of the enemy we must defeat? Consider the ways of Yosuke Suma, one aircraft worker in the Nakajima Aircraft Works in Nagoya. Nakajima is one of Japan's greatest aircraft plants.

Yosuke Suma and his family are serfs who make the planes in which Jap pilots challenge our own gallant airmen. The family were neighbors of mine. In the Middle Ages a serf was attached to the soil. He

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FPG Photo

panese Diet, in the earthquake of 1927.

could not leave the estate of his feudal lord. Neither can Yosuke leave the Nakajima Aircraft Works. He is frozen to the job. It would be a major crime for him to try to leave.

All labor in Japan must register for conscription. The soldier gets a red card of notification, the laborer a white. Registration ages of men were 12 to 60 in 1943, have now been pushed up to 70. Unmarried women must register also; their ages are from 12 to 40. They may be shipped anywhere and put to work in any industry.

Yosuke lives with his wife, Chiyo, and their four children, ages 6 to 13, in a tiny wooden box with a tin roof over it. An electric bulb hangs on a cord inside the house-box. In this one room a two foot corner is cut off for a privy, with its cesspool beneath the house. This house is exactly like tens of thousands of others that are jammed together on either side of an unpaved lane.

Yosuke spends 16 hours a day at his work, with two days off in the whole month. Japan does not observe Sunday; this nation is not a Christian society. He naturally cannot go on a strike.

When Yosuke's children are not in school you will find them squatted on the floor of their single-room hut, doing piece work on some minutiae of aircraft. Japan's youngest aircraft workers are children 12 years of age. Hour after hour until late in the night they sit there with their mother, repeating endlessly their monotonous task. This family unit of production is universal in Japan. Chiyo and her children make about $1.25 a week. It is suffocatingly hot in those little shacks in summer, bitterly cold and damp in winter. There is no heat for charcoal is rigidly rationed. None can be had for the family brazier for heating — it is reserved for cooking.

Yosuke's family have neither enough to eat, nor any variety. All Japan stays hungry all the time. Chiyo and her husband are permitted only 7 sheng, or 8 pounds, of rice apiece each month. Japanese adults ordinarily have used a pound of rice a day. It is the one great staple in their diet. They cannot easily be shifted to another, cannot even shift from the customary polished rice to unpolished rice. But 40 per cent of their ration of rice last summer was unpolished rice. This has caused serious digestive upsets in both Chiyo and her children.

Fish, the second great staple, is almost impossible to find in the fish markets. In ordinary times 40 per cent of the diet of the Japanese people is fish. Now there is a great labor shortage among fishermen. Much of the fish haul is dried and sent to the army in China that now fights on a front over 2800 miles long. Chiyo may be able to buy one pound of fish a week if she waits in line long enough. And sometimes

The Japs have practiced air raid drills for years. These searchlights now seek our planes.

FPG Photo

FPG Photo

Japs are used to regimentation. This is cleaning time in Tokio. Twice a year the law compels all houses and shops to be thoroughly cleaned by setting their furniture out in the streets.

she is able to buy eel or whale meat. But in winter it gets cold in Nagoya, and waiting in line for hours is hard — Chiyo has no leather or rubber-soled shoes now, nor has she any woolens. There are no new cottons, woolens, or silks to be had.

Ordinarily the myriad little one and two-acre farms of Japan produce a sufficiency of vegetables — cabbage, spinach, lotus roots, bamboo sprouts, potatoes, tomatoes, the beloved white radish that grows two feet long, and many others. But not now. Japan made her tiny farms produce so abundantly because of the vast labor she utilized on them. That labor is gone now. And our blockade of Jap shipping is rising to a crescendo that prevents many imports from the outlying ring of Empire. Hence vegetables are very scarce. Seaweed is the commonest. Chrysanthemum blossoms may be had at times. These are drenched in sake and soya-bean sauce and eaten. You can no longer buy peanuts, pistachios or beanjelly candy, the universal confection in Japan. Nor can you find, anywhere, meats whether dried, canned, or fresh. Milk, butter, cheese, bread, canned goods, or salad dressings are not to be had at any price.

IN Japan as in America women are for the first time playing a vital part in industry. In the Nakajima Aircraft Works, as in all other Japanese factories, the proportion of women to the entire labor pool is determined by the government — or rather by the military that controls this government. In July of 1944 the decreed proportion was 38 per cent of women aged 12 to 40. Another 33 per cent of the labor was forced labor from China and Korea; 15 per cent was adult Japanese men; and 14 per cent of it was boys too young for the army or physically disqualified.

Yosuke is a highly-skilled worker, so that his wages are at the top of the list — he receives the equivalent of three American dollars per day. But 42 per cent of this is taken out for taxes, bond purchases, and compulsory savings. His rent is an equivalent to $6.78 per month. After all deductions his wages come down to barely enough for subsistence.

He has but one pot for cooking — the law allows him this metal pot, one clay brazier for his charcoal fire, one metal-bladed knife, and one family treasure or luxury. His own luxury is a little portable victrola. He has no furniture, owns no property anywhere, and has no bank account. He and his family sleep on the floor. In summer mosquitoes are bad and he sweats under a mosquito netting; in winter the wind blows up through the cracks in the floor.

Why does he work so hard under these conditions? Not because he holds the ideal that through his own efforts he can rise to some place of importance where he could have a better life. Rather is he driven by the belief that he as an individual is nothing, and that only by grace and sufferance of his god-Emperor does he live.

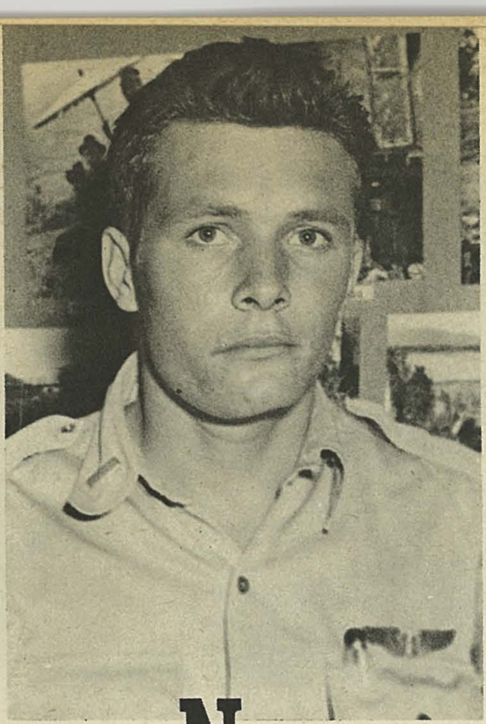
Twice a day Yosuke is taken from his work to the roof so that he may hear this doctrine preached in grandiloquent style. He is told that peace is only to be found in unselfish sacrifice for the *Kamigoichinin* (Upper Exalted Foremost Being) and Dai Nippon (Great Japan). He hears endless propaganda over the factory radio about Dai Nippon's divine mission and the holiness of Japan's cause. He is told constantly of the invincibility of the Imperial Army led by the *Tenno Heika.* He is reminded always of the godlike virtue of the sacrifice he is making for his godlike Emperor. He knows nothing at all of Japan's true status in the war today.

Thus he fully believes Japan will be victorious. Ask Yosuke or any one of the millions of other Yosukes in Japan when victory will come and he will reply — *madamada* (later on). That is typical of the Japanese mind.

Still, our aircraft worker in Nagoya, like hundreds of other industrial workers in Dai Nippon, must feel some trembling wonder about the future. Contrary to expectations, little has been done for Yosuke's defense. As the air raids mount in intensity, Yosuke's life has become disrupted and sleepless. For months searchlights have played the skies over Nagoya, black-outs have been enforced. Now the expected raids have become reality. No matter what the death and destruction around him, Yosuke cannot flee. He is a slave bound to the machine — and a willing slave. He has no choice even as regards his family, who are similarly enslaved. And — having never known it — he could not value freedom if you offered it to him.

Yosuke is desperately serious in his work. You never see him laugh. He never jokes. He is always tired — but he is purposeful.

He is the man our Air Forces and our Army and Navy must defeat. But he has already had complete defeat in life, by any standards we ourselves would apply. And he cannot fear death because that, by his definition, will be his final glorification as a subject of his god-Emperor.



Not like the Movies

By Lt. Richard C. Amidon

Bombardier 7th Heavy Bomb Group
10th Air Force

I'M 22, now. I've learned some things first hand.

Don't believe all that those Hollywood features tell you about life and death in the Air Forces.

Don't believe that a bunch of ribbons on a chest always marks a hero, for instance. Often they mean luck. You get them when you have completed a certain number of combat hours. In the Indo-China theatre, for your first 100 hours on mission you get the Air Medal; for 200, your DFC; for 300, an Oak Cluster for your Air Medal; for 400, an Oak Cluster for your DFC. Along about 450 combat hours the flight surgeon ordered me home on leave: battle-weary, he called it.

They gave me two battle-stars for my CBI theatre ribbon, indicating I had met up with the enemy in service in both India and China.

Don't get the idea that even wounds necessarily make a hero, either. In December 1943 I got the Purple Heart. An explosive shell had come in through the nose of our B-24 and showered the navigator and me with shrapnel. The stuff winged me in the left leg, right arm, and my head. I didn't lose consciousness; didn't even lose much of my Grade-A blood. It was like getting hit with buckshot: a lot of little holes but no blood.

They didn't even hospitalize me. No lovely blonde nurses. No need for help to write my letters home. Just some gauze, cotton and sulfa powder, a strong anti-tetanus shot, and a little "Be careful, Lieutenant, with those bandages for a few days when you take a shower." That was all.

And don't believe the romantics about the deep comradeship in war making. Of course, in a bombing plane you do nothing single-handed except spit — you're part of a team, and for better or worse your life is wrapped up with the lives of the rest of the crew. But actually, you make friends quickly and lose them fast.

Your crew loses a man and you take on a replacement, and pretty soon you've forgotten what the missing guy ever looked like. You become casual in your acquaintances. War is a matter of here today and where will you be tomorrow. Some of the men you meet are wonderful fellows; a few are bastards. Some of your officers are pleasant to work for and some have downright poultry-yard officiousness (the Army has a phrase for it). You try neither to get too friendly with men you like nor to be too much annoyed by those you don't. Keep your relations impersonal, like a surgeon. Get the job done and go on back home. That's the idea.

And don't let them tell you flying is exciting. It happens I had never even been off the ground, except in a hotel elevator, until I dropped my first bomb. That was back at Midland, Texas, where we did our training. Flying for most of us in the Air Forces is usually about as routine as pushing a lawn-mower, and less pleasant. Stripped of all needless weight, accessories, and comforts, a bomber is as bare as a cold box car, and all you need is the click of the rails to think you're on a railroad. Except it doesn't take you to interesting places.

Of course you have your highspots. There was the day, for instance, our No. 2 engine caught on fire when we approached the home field. We didn't know as yet how badly we had been shot up by both flak and machine-gun bullets while over our target. We were at altitude 700 feet, preparing to let down. The co-pilot pushed buttons A, B and X, to drop the landing-gear. The tricycle didn't drop; Annie didn't live there any more. So we circled the field again. Our No. 1 motor caught on fire then, too.

What you do then is drop your flaps. That slows you down to a speed safe for a belly-landing. We tried that. But the vice-president in charge of flaps said they had left town.

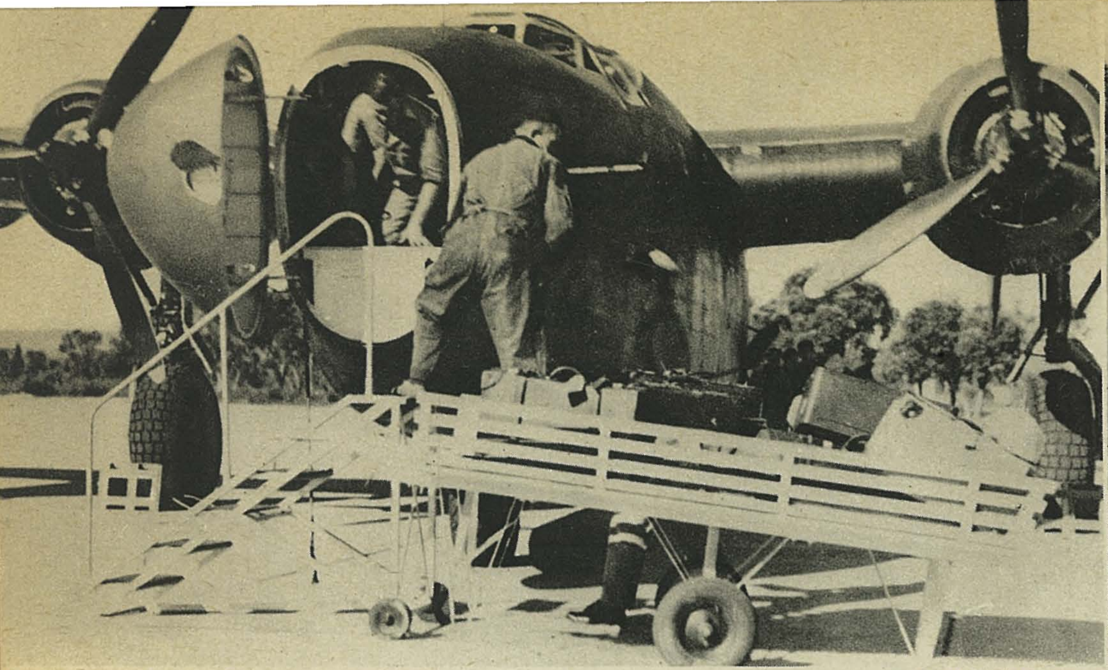
So it was simply a matter of crash-landing without slowing down. That landing-strip looked as long as a calling-card as we whizzed toward it at a speed of 150 m.p.h. We hit the ground kerplunk and crumpled up the entire belly of the ship. We were sweating out an explosion and fire. I remember climbing out the top turret, just like that. The plane had jack-knifed together, so the top turret narrowed like a cellar-window. I tore my clothes off getting out. But not a man of us was killed or even injured. The medics keep a select supply of combat whiskey on hand for such events. Somebody poured us a drink. One moral is that even crash landings aren't always bad, at all.

Such moments give you tingling tensions. But don't think they release the festering monotony down inside of a man. Often your only feeling after a mission is loneliness and depression. You come back from wherever they sent you with that load and you know there will be a vacant bed, maybe two, beside you in the barracks.

Well, it almost surprises you that the bed is still vacant when you get up the next morning. Pretty soon the department that handles such things calls around and packs up Joe's or Bill's things to send them home. They always look through everything first. Some man's wife or family might be awfully surprised over the love-letters and/or other accessories out of a shirt-pocket. So the Air Force is tactful about things like that.

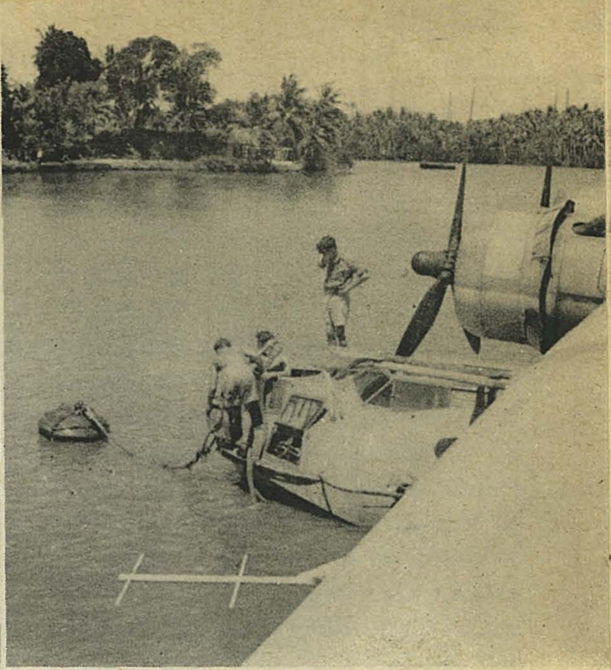
But you don't spend time brooding when those things happen. You don't feel either heroic or fatalistic. You just think you're maybe lucky, without much reason. You see men who never say an unkind word or think a lousy thought get shot down. You see lots of others with dusty consciences come home endlessly alive and happy. You don't see a meaning in any of it. Maybe there isn't any.

The one thing you can be sure of is that the meanings the writers try to give it in Hollywood are usually the bunk.



Quantas Empire Airways

Loading luggage through the nose of a Liberator Express on the "Kangaroo" hop, India-Australia.



Quantas Catalinas at an RAF anchorage in India.

SPANNING THE INDIAN OCEAN

The British operate a globe-girdling system of airlines that has been using Liberators and Catalinas, as well as British planes. Here is the story of one vital link.

by Fred B. Barton

For some time during this war there was just one gap in the Allies' globe girdling air communications that was not bridged. This was the over-water route from Australia to India. Our own American Air Forces spanned the Pacific by flying west as far as Australia. And both American and British planes reached India, going east via Africa.

But between Australia and India lay a water area falling into the British zone of influence. To fly it required planes capable of making the longest non-stop over-water crossing in the world. Islands that might have served as intermediary stops — the Dutch East Indies — were all in the hands of the Japs. To bridge this gap, the British finally began using American Liberators and Catalinas, in 1943. Operated by Quantas Airways between Colombo, in Ceylon, and Perth, in Western Australia, this service now connects in India with London bound planes, and gives England the final needed link with all her Empire.

The present route has been in operation a couple of years, but only recently have the military authorities considered the Japs pushed back far enough so that a reporter could safely talk about this lengthy and important flight.

The British are often secretive, but when I reached Ceylon they opened up. "Now you can show pictures of entire planes," they whispered. "No more slashing-out of special equipment" — so they said — "at the censor's hands. Now you can show an RAF plane *complete.*"

You can hardly realize what this means. When I flew in an RAF-piloted Liberator from Ireland to Iceland in 1943, I posed the pilot and crew alongside their kite — a plane is always termed a "kite" or an "aircraft" in the RAF — and took snapshots which I thought revealed nothing censorable. Yet the censor's deft razor-blade cut out various features of the plane. After that I found myself photographing people up against things like barndoors.

But they've taken the wraps off the Quantas operation at last. That's why I flew to Colombo to take a look at it. Colombo is a city of jewelry stores, but if you want star sapphires, it's safer to get your bargains back home, at Tiffany's. I was looking for Cats.

I found them after an 83-mile ride in a jeep with an RAF guide and a barefoot Singalese driver who drove in straight lines. "Don't kill that cow!" I screamed at him presently from the back seat. He swerved to the left. And for ten minutes afterward he argued. "That cow was on the wrong side of the road," he said.

We reached the RAF base, signed in with the adjutant, had tea and marmalade and toast, and walked around the airbase in a setting like something out of a travel folder — coconut trees and bullock-carts and tawny natives, mixed in with dozens of RAF lads wearing jaunty blue caps and not much else, except boy-scout shorts. You dress for efficiency and for comfort, often stripped to the waist, when you fly for the RAF.

We rode a small launch out from the jetty to where a whole bevy of Catalinas were tethered, like so many swan-boats on Central Park lake, to their mooring-buoys. The sun was already low in the skies, and suppertime came before I had done much more than admire the scenery — followed by a social hour in the clubroom with RAF flyers around the loud-speaker and the bar.

I slept that night under the usual mosquito-bar dropped around my cot, and in the morning I met "T-for-Tommy," which is the name of a Cat.

Joe Atkinson introduced me. He is a compact little Canadian lieutenant who is the "T-for-Tommy" skipper. About himself he said little. It's the same with almost all airmen — they are shy about themselves, and talk constantly of their planes as if the machines were animate things.

"She's one of the first Cats sent overseas to us under lend-lease," he said. "She's the oldest Cat in our service. She has done over 2,300 hours. And she's still the best flying-boat in our fleet."

It developed that "T-for-Tommy" has outlasted two full crews — the RAF lifts its men out of flying after 1,000 hours of service — and had seen two of its skippers receive the Distinguished Flying Cross.

The old kite had served variously at Gibraltar and in the Mediterranean before it got down to the Indian ocean, where it took part in several rescues and helped pile up a total of 851 lives saved by planes from this one airbase.

Some of the reddest-letter days in its history came in February 1942, when it helped in the evacuation of civilians from the Nicobar Islands. The crew destroyed military equipment before the Japs could arrive, and Wing Commander L. J. T. Hillyard, who captained "T-for-Tommy" and led the sortie, was awarded the DFC.

Later, in December 1942, it took part in the bombing of Sabang, a 2,000-mile trip. Squadron Leader Stacey, who was its skipper then, was awarded his DFC for the feat. He flew through flak at 300 feet.

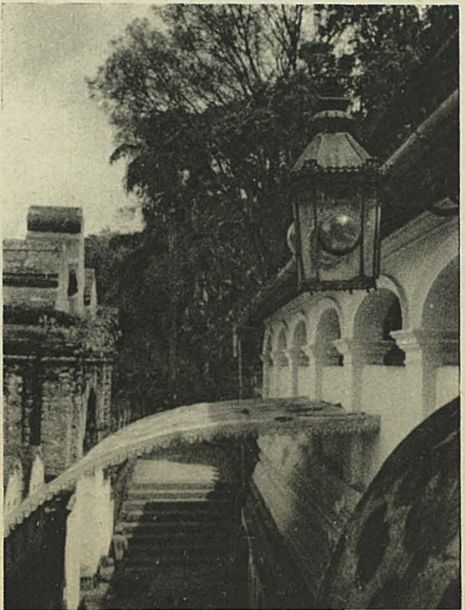
PERSONALLY I have no great feeling for machines as historic heroes. I just summarize Joe Atkinson's account of this old Cat's adventures to show you how these airmen regard them, how they revere them.

If you can sit still in one of these Catalinas for 27 hours, you have what it takes to earn the Order of the Double Sun. This Order is issued to all passengers completing a one-way journey on the Quantas Line's Cats between India and Australia. If you ride a Quantas Liberator on the same line, you get a certificate for the Kangaroo Hop — longest in the world. The Liberator trip of around 18 hours is, of course, much faster than the trip in a Catalina, which has a heavy hull for landing on the water, and so is a slower plane. If you make the 3,600-mile flight in a Catalina, you leave Perth in Western Australia in the darkness of early morning, and see two sunrises before you land. Hence insignia of the "Order of the Double Sun" shows two radiating suns with a Catalina between.

For the present, travel accommodation on the route has been restricted to high priority passengers on war business. Passengers get several meals during the trip, but no fixed hours are observed. Passengers and crew eat when they feel like it. Menus generally comprise cold collations, vitamin-packed salads, sandwiches and fruit. The same informality governs the activities of the Catalina's coffee urn. This is turned on or off at the whim of passengers or crew. Passengers usually are only too glad of an opportunity to get out of their seats, if even for only a brief spell in confined quarters, and major-generals who have made the crossing have carried cups of coffee to members of the crew.

Since a large part of the flight is made across territory threatened by Japanese aircraft, strict radio silence is observed from the time a plane leaves Perth. Quantas has turned to some of its oldest pilots for men with navigational skill, in order to reduce the hazard of planes losing their way. This entire trip is made by astro-navigation and dead reckoning. Danger of Japanese air attack at the Ceylon end has even closed radio homing aids usually available.

Temple housing one of Buddha's teeth, in Kandy.

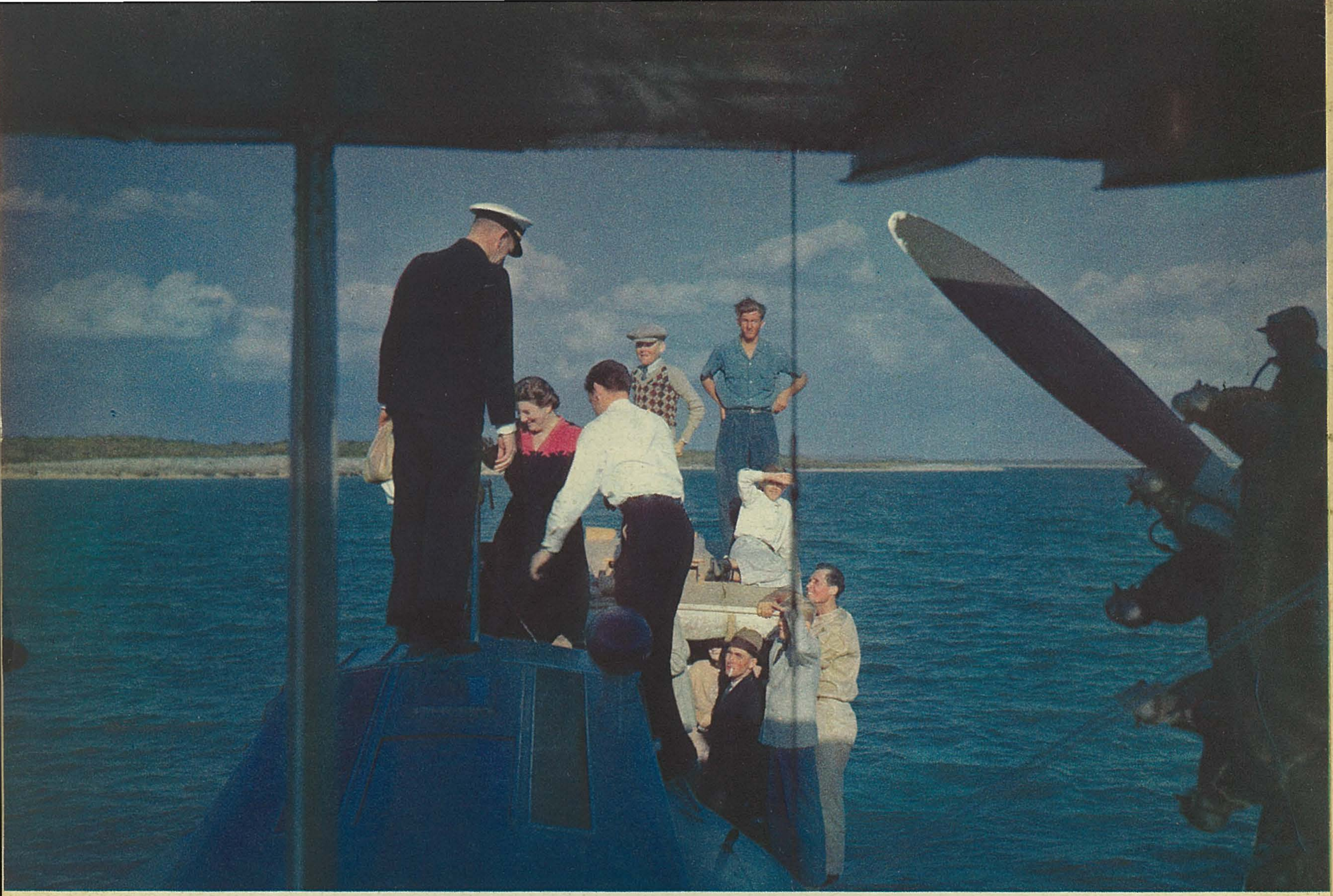


Although the Indian Ocean service fulfills a wartime need, experts consider it unlikely to continue when hostilities cease. Operating costs would probably make it uneconomical in peacetime. End of the war almost certainly will see Quantas again operating over the easier route via the Dutch East Indies to Singapore. Its flights over Burma and India will then be a matter for future settlement between Quantas and the British Overseas Airways Corporation, in which the British Government owns a large interest. The British and Australian governments will also be concerned in the matter.

Substitution of the British Lancasters for American Liberators and Catalinas on the route, in the near future, is meanwhile to be regarded as a natural development. The Empire naturally has a pride in seeing Empire built planes assigned to official routes. That Catalinas and Liberators were available to make the route possible during an emergency is to be regarded as one of the good fortunes of war.

The importance of this route in British post-war plans is paramount. It becomes the final link in Britain's girdling of the globe with British air service. As recently announced, the British have started, from Montreal, a trans-Pacific line that runs west through Canada, turns south to touch at San Francisco, and carries on as far as New Zealand and Australia. (See Plane Talk for January, 1945, Page 20.) So the British air arm that reaches out over the North Atlantic, from England to Canada, today stretches on over the Pacific to India, with the aid of Quantas.

Going in the other direction, east from London, the British have long had a through route to India via Karachi. Thus they are now operating lines that literally circumnavigate the earth. Further, they are operating from round-the-world bases that are wholly British owned or controlled. They need only omit stopping on our own west coast to have an air-line system on which — as they once said of the Empire — the sun never sets.



Captain Chapman acts as pilot, navigator, conductor, business and promotion manager.

AIR LINE IN *Paradise*

Here's one story about something beside war. It couldn't happen many places nowadays, but –

By Capt. W. P. Monan

Photographs by James Tierney

Too many of the world's palm-fringed islands, once washed by azure seas, have been engulfed in blood-stained tides. But Nassau is one paradise that stands serene. Men can still dream of going there. I know one Captain who did.

He flew down with an old Commodore last fall, and what has happened to him since could make many a man green with envy. It's no story of world-shaking significance. But it might give an idea to some airman wondering about post-war opportunities. And it shows how much a little airpower can do, when you use it to make life a better thing. So it's a happy story. Maybe that's excuse enough for telling it, in these times.

The Captain is a young flyer called Ed Chapman, who is a Pan-American Airways pilot; and the Commodore is an old airplane —13 years old last December. Planes are sort of like dogs—a year in a dog's life equals seven in the human span, they say; and most planes age even faster. So you see this Commodore is a very old airplane indeed.

It was originally built as one of the ancestors of later Consolidated Vultee planes that are nowadays making war history. Back in 1932 Commodores were the largest flying boats in America, and this one was making the then unbelievable run from New York to Buenos Aires – 9,000 miles flown over 15 countries.

Well, this old Commodore came down to Nassau to fly after helping the war by doing a two-million mile Army training program. The plane is owned by Pan-American, but it is on loan to the Bahama Airways, in which Pan-American owns stock.

For all intents and purposes, the plane *is* Bahama Airways, for the present. The other owner, besides Pan-American, is the Honorable Harold G. Christie.

Today the Bahama Airways, in the shape of this plane, is giving the natives of the Bahamas a whole new outlook. On the islands surrounding Nassau—which itself is some hundred miles from Florida—live perhaps 60,000 people, largely scattered through isolated fishing villages and farms. Nassau is the only real center. Boats are the only other means of transportation.

The islanders have taken eagerly to the idea of riding the Commodore to "town", which means Nassau. But the airline means far more to natives than the mere convenience of going to town quickly—or sending messages and packages in a hurry to some other island in the Bahama group. It has taken on intimate emotional meaning.

It has served, for instance, vastly to increase the attendance at funerals. In the old days, people working at Nassau could practically never get home in time—if home meant some outlying island—to help bury Aunt Bessie or Grandma. Funerals in these tropic latitudes are conducted without any delays to accommodate the distant mourners. Since the Commodore came, it has been carrying groups of grieving relatives all over the islands, including Governor's Island and Green Turtle Key. Such usefulness has already given the old plane the prestige of an island institution.

Captain Chapman started the plane off in its service out of Nassau late last year. This particular Commodore—as old-fashioned as a Model-T Ford, and as safe—had for some time been employed with two similar ships in Pan-American's navigation school at Dinner Key, training Army men like those who plotted Doolittle's course to Tokio, and carried MacArthur safely from Bataan. In September of 1944 the government contract for such training was cancelled. Rumors rushed through the hangars. The three ships were to be used for flying rubber from the Amazon; they were to be sold; they were to be junked; they were to carry cargoes to San Juan.

Nothing of this happened to two of the planes, which have remained sitting, with engines decently covered, in back of Dinner Key hangar.

The third had a more immediate destiny. Loaded with beaching gear, spare parts, and ground equipment, she headed for Nassau under Skipper Chapman and his co-pilot — both of them old hands at flying her during navigation days.

The Commodore has been kept busy ever since her first Nassau anchorage.

From the beginning, for instance, she has been useful in serving the multi-millionaires who—with family and entourages—commute to their private dream-worlds in the income-tax free outer islands.

Her greatest renown, though, comes of her service to the island masses. Typical of their eagerness to fly is the enthusiasm they have shown for Chapman's inauguration of Sunday morning "Picnic Specials". The "Specials" started with a three-line ad in the local newspaper.

The ad merely stated that if enough persons were interested, Chapman would fly a group to Paradise Beach on Hog Island, where the passengers could spend the day swimming in the ocean before being flown back to Nassau that evening.

The price in American money amounted to about twelve dollars — that is, three pounds for the round trip.

By the following afternoon, Chapman had received reservations for ten times the number the Commodore could carry, with requests for future flights.

Came Sunday, and the "Picnic Special" was inaugurated. Three times that day Chapman and co-pilot ferried basket laden passengers in bathing suits to a landing area adjoining Paradise Beach. He and his co-pilot took time off for a swim of their own, then began the trip back, touching water in the harbor just after sundown.

Ruefully, Chapman admitted that his tiny ad had started something. He foresaw that his wife would see little of him in Sundays to come. That is exactly what has happened.

Ever since then the old ship has been making money for the airline. The line previously had another plane — a Douglas Dolphin — but the Dolphin at present isn't functioning.

Chapman is the only Captain flying for Bahama Airways. He is a business manager as well as an airman. He now publishes a

The old Commodore seats 22 passengers, has freed the Bahama residents from dependence on slow mail boats, is literally regarded as a heavenly boon.

small ad regularly in the two local papers — the Nassau *Guardian* and the *Daily Tribune* — telling the public when and where the next trip will be scheduled. Many of his trips are charter trips, for which the rate is $100 an hour, or 25 pounds in British funds. This puts the cost per passenger mile at about five cents, on the basis of 22 seats in the plane. That is obviously cheap transportation.

On the charter trips Chapman tries to take as many passengers as possible. This he accomplishes by asking each passenger when and where the passenger would like to travel next. Chapman records the name, telephone, if any, and the desired destination. The next time he is going that way on a chartered flight, he lets the prospect know. He credits 50 per cent of any fares thus paid against the charter fee contracted for.

It is Chapman's job — among others — to take care of the tickets before each flight, collect the money, decide where the trip is to go, and turn in the money to the management. In flight he acts as conductor as well as pilot. After take-off, he climbs to cruising altitude, hands the controls over to his co-pilot, then walks back through the plane collecting fares from each passenger. His pockets bulging with tickets and English pound notes, he then returns to the cockpit, to navigate toward the appointed destination.

On landing, Chapman's chief operational difficulty is to find a bottom that will hold the anchor, at many of the islands he serves. If a suitable anchorage is lacking Chapman or his co-pilot must remain aboard, to start the engines should the 8-ton ship slip its mooring.

Meanwhile the other pilot goes ashore, looking for possible business. Chapman simply informs someone on the island — usually the radio man — that he will be back at approximately such and such a time. The word will then be passed along, so prospective passengers can prepare themselves. Chapman always circles widely in the air, to give notice to potential traffic that the "Bahama Special" is arriving. By the time he has dropped to the water and taxied into shore, the passengers are all at the dock sitting on suitcases.

He has his troubles, of course. But his grateful passengers make light of transportation breakdowns. Once, for instance, when he ran aground on a bar, the passengers without a murmur shed coats, shirts and shoes, and went overboard to help shove the old Commodore off the sand bar.

The ship is subsidized by the British government to the extent of 1200 pounds a year, or about $4,800, the subsidy being paid on the theory that the plane and its crew are on emergency call at any time.

This last January, for instance, they received an emergency call from Harbor Island, 50 miles north-east of Nassau. An American business man, Larry Huntington, was reported falling into a coma. An hour and a quarter later the patient was on a stretcher, headed back by plane to medical care at Nassau. The previous December, Chapman carried a doctor and priests to administer last rites to Father Arnold Monlock, stricken at lonely Long Island. The Commodore was similarly hustled off posthaste last December, to succor a young girl suffering from relapsing fever at "The Bight", on tiny Cat Island.

The plane has likewise rushed to the scene of ship accidents. It is always at standby to help survivors of possible shipwrecks, and being a flying boat, can put down on the water alongside lifeboats and rafts. It has saved a number of lives, both directly and indirectly.

Thus in a relatively brief time the old flying ship has come to seem not only useful, but downright necessary, in the life of the Bahamas.

The only other transportation available to the islanders is by government mail boat. The mail boats are 50-foot power boats with auxiliary sails, shallow drafted for the Bahama flats. They roll devilishly in deep water, and are also slow.

Since Nassau is the commercial center of the islands, any one with business enterprises in the Bahamas must stay in Nassau the year round. Before the Commodore came, some of these people had not been able to get home in two years. Just to reach home for Christmas dinner would have taken many of them at least twelve hours each way through a rough sea. But Christmas Eve Chapman flew 23 persons (one an infant in arms) from Nassau to their homes at Oaktown on Green Turtle Key. Landing them Christmas Eve, he then brought them back the following afternoon.

To local people of affairs, the service has become a boon. Many of the wealthier passengers formerly flew their own planes about the pretty islands, before the war. The Commodore has carried on charter trips almost every important business man in the islands.

The man who supplies all New Providence Island, where Nassau is located, with milk, eggs and chickens, uses boats to ship his produce but insists on using the Commodore for his own travels. Betty Carstairs, the famous American girl who owns Whale Key and had her little empire written up in *The Saturday Evening Post.* has not yet flown in the ship. But Chapman half expects her any day now.

The Abaco Lumber Company and the General Sea Food Packing Company are two local organizations that use the Commodore often to carry their executives quickly from office to manufacturing plants. Hugh Griffin, manager for General Sea Food, travels regularly every fortnight on an inspection trip that takes only four hours by plane, but would mean an overnight voyage by mail boat.

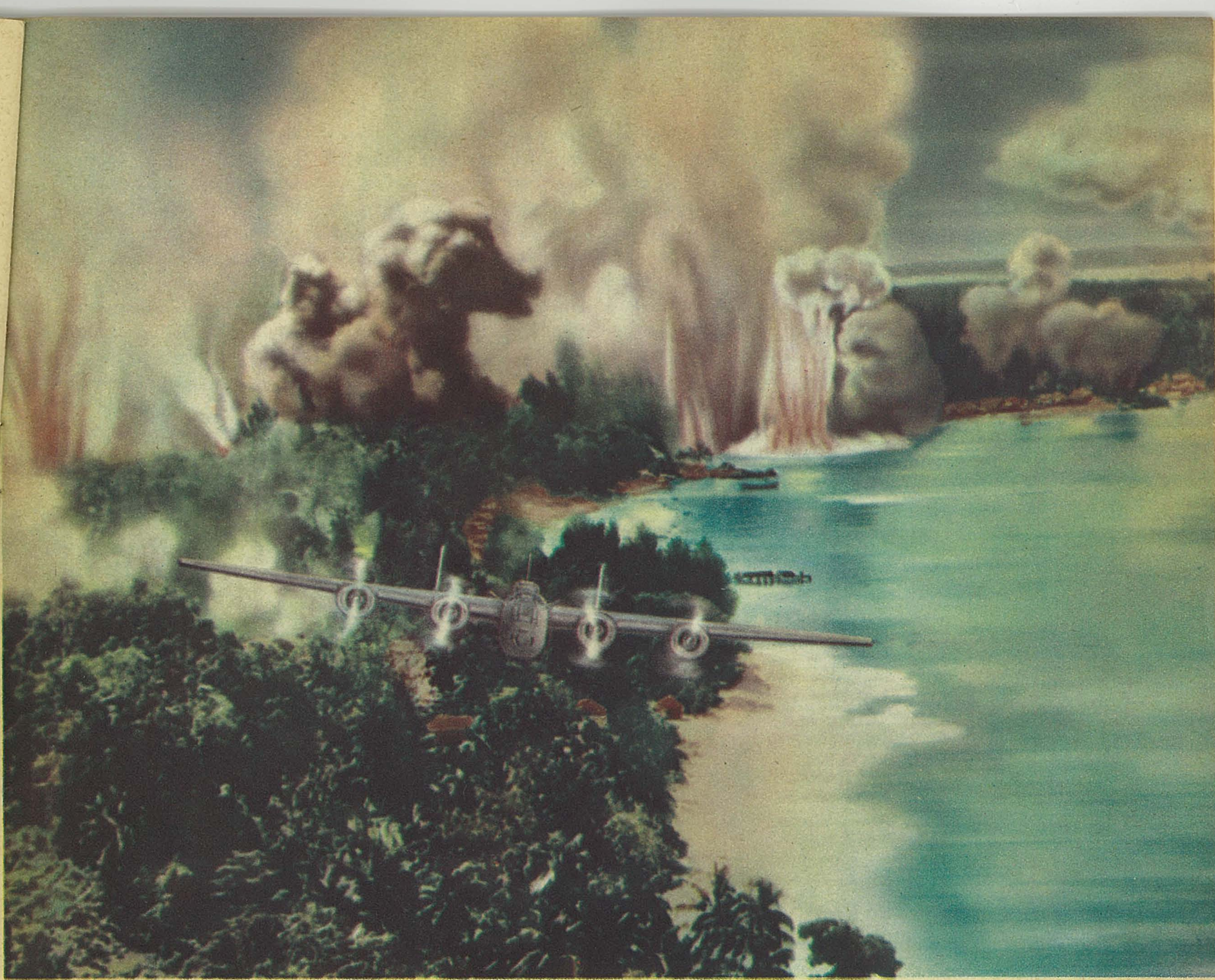
The possible uses of such a service are limited only by imagination. Christie, president of Bahama Airways, has plenty. Being also in the real estate business, he has discovered the one novel way to sell prospects. He flies them.

He loads up the airplane with possible purchasers and wings low over the chain of keys. The prospects dream aloft over the fabulous beauty of the Bahamas, the amazing color changes of the water as the sea varies in depth from two to 600 feet, the natural perfection of each little island sitting like a jewel on a shimmering mirror. The passengers can lean out of the windows, study the islands from every possible viewpoint, and say: "I'll take that one!"

Already many millionaires have been attracted to the Bahamas, to build there their own island Shangri-las, and Christie is enthusiastically making plans for the future. He hopes some day to run on regular trips with the Commodore as far as Cuba and Jamaica. Chapman recently made the company's first charter trip to Jamaica, carrying the Receiver General there, with eleven other passengers who were eager to make the five hour flight.

Chapman charged them 20 pounds for the round trip.

Business is wonderful, and everybody concerned is just downright happy.



HOW WE GOT OUR SHIP

By Lieutenant Walter Petravage

Fifth Air Force

By day the Havocs, Lightnings, Thunderbolts, Mitchells, and Warhawks scourge the coasts in search of Jap barges. Farther out on the sea lanes, long flying Liberators keep constant patrol for the more venturesome freighters and transports. At night, the Black Cats take over — night-flying Catalinas with special bombsights. Add to these scourges American submarines and the most powerful Navy in the world. That is how the Jap life line is being shredded in the Southwest Pacific.

We almost missed playing our own part in this shredding — our crew did. We had about four or five missions more to go in our Liberator before our combat tour was completed. One of these was to be reconnaissance, to search for ships. Three times before we had flown ten and twelve hour "reccos" vainly searching the seas for Jap shipping. It was a little discouraging to fly from dawn till dusk with nothing for our pains. The pilot, 22-year-old Lt. Bill Dean, said that he wouldn't quit until we had sunk a Jap ship. The bombardier, Bill Cunningham, wasn't so eager as all that, but knew you weren't quite respectable if you didn't go home with at least one notch in your bombsight.

We had talked about that ship, planned for it, schemed on it. And we weren't going to be denied. We had a little trick we worked out and kept very secret. Too many crews had come back biting their lips because they missed their chance. There had been a Jap ship on the water, big and bloated and the sweetest target you ever saw. They had taken their time and made a careful run but the damn thing had turned just after the bombs were released. All they got for their efforts were a few dead fish in the ocean. That was a favorite stunt of the Japs. Waiting for the bombs to be released and then altering course.

But we wanted a ship badly, so we had that all figured out.

The morning of our last recco we took a solemn oath. We'd get a Jap ship that day if we had to sail into a Jap harbor at five hundred feet. And doing that in a B-24 makes you a sure winner for collecting that ten thousand dollar life insurance policy.

That morning we were up before dawn and ate a breakfast of fried eggs and lukewarm coffee. The mess hall was deserted and it gave you a strange feeling. When there's a raid on, ten or twelve crews are eating at the same time. There's the relief of a lot of talk, a roomful of fellows, the strength of a crowd. That morning the mess hall was empty. We were the only crew flying.

So it was a quick meal and then down to the plane in a bouncing truck with the stars still blinking in a waking sky. It was to be a daylight take-off and so we waited around till there was enough light. Sitting on an empty oil drum in the revetment I thought I'd have a little fun.

"Dean, what do you want to bet we don't even see a rowboat today?"

That got him fast. "Well, we'll sure as hell fly till our gas runs out trying. Then we'll come back for more and go out again." He was deadly serious. Getting a boat was the only thought in his mind now.

FINALLY it was light enough for us to take off and we climbed into the plane. We were carrying three one-thousand pound bombs and Cunningham checked them carefully while Dean ran the engines up. There would be no excuse for a malfunction today. If we sighted a ship those bombs were to be a pay load.

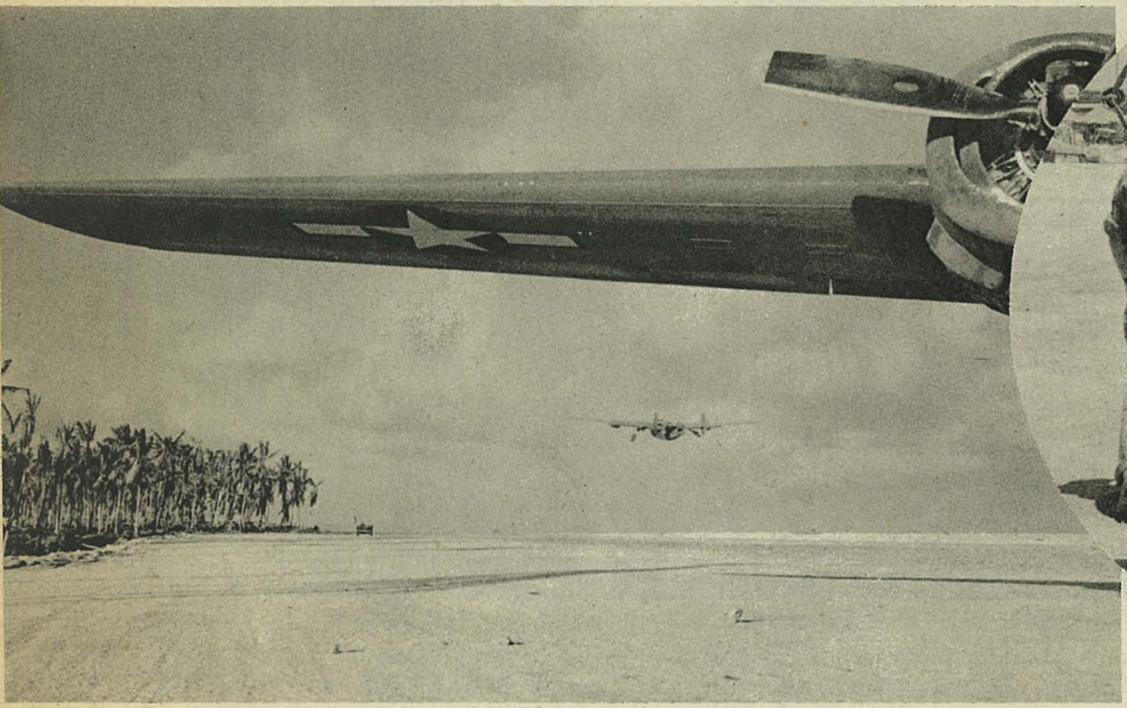
No "if" about it. We *had* to sight a ship.

At the end of the runway we stopped while Dean and Bowerman, the co-pilot, checked the instruments carefully. A green light from the tower and we began to move down the runway picking up speed rapidly.

Three quarters of the way down our wheels left the ground and we were airborne. In five minutes we were over the water and started on the long grind. We flew at five thousand feet and the visibility was good. If there was anything out there we'd see it. Most of the mission was over enemy waters. But the Japs had been taking such a pounding lately they were wary of their shipping. I had hopes, though, that when we approached a certain island that was critical we might see something. The enemy was fighting desperately to supply this island despite our constant air attacks, and wanted to strengthen it against the possibility of an invasion. We were to pass near that island and that's where I set my hopes.

Plotting the search pattern for the day I figured the entire mission would take about ten hours. Seven hours out we would approach the island on our long square search. The island was only three hours flying time from our base, but we were covering other waters first.

Settling down for a long haul we scanned the waters carefully. Flying reconnaissance is weary business when there's only water to look at. It means long hours of ceaseless watch with the binoculars ever handy. It's surprising how often you can mistake a group of coral reefs for an enemy convoy. Then there's a quick alert, the gunners are ready at their sights, the bombardier is poised, the pilot prepares to make a run, the plane is swung into position and bears down on the target. Then somebody yells through the interphone: "Oh hell, it's only a bunch of rocks."



Liberators taking off from one of America's island bases in the Pacific, to hunt Jap ships.

Tired Liberator men return from a mission.

For the first five hours we were patient. This trip had pay dirt in it someplace. Just give it a little time.

After five hours we began to get a little restless. We broke open some sandwiches and started to eat without much appetite, one hand on a piece of bread, the other on a pair of binoculars.

Six hours out I pushed my head into the cockpit. "What did I tell you Dean? Not even a rowboat." He turned around and glared at me. Didn't say a word. I knew that soon we'd be near the island with the possibility of good hunting but I didn't say anything. I wanted it to come as a surprise . . . if it came.

Six and a half hours out I knew that if it came it had to come soon. If there was any shipping on its way to the island it would be in these waters. I looked up at Kernan, the engineer, sitting in the top turret ready on the guns. If there were any decks to be raked with fifty calibre fire he'd be sure to do a good job at it. You don't get two Zeros without a pretty sharp eye.

I went into the cockpit and crouched between Dean and Bowerman. Dean turned to me and smiled, an expectant, anxious smile. "Hope this isn't another bust. I'd hate to have four reccos and not a sign of a ship." He was obviously beginning to weaken.

Lieutenant Petravage, second from left in the rear, with the crew that got its quarry at last.

I was going to answer him when suddenly he straightened. Somebody had called him on the interphone. He crushed the earphones to his head, listened intently. Then he turned quickly and looked out the left window. For about thirty seconds his eyes roamed wildly. Then he gave a yell and banked the ship sharply to the left.

Something was happening. Straining over his shoulder I looked out the window.

A five ship convoy! Not one — but five!

Dean was yelling something through the interphone and I saw Kernan stretch in his seat. Then the charging handle of his guns went zip! and a couple of practice rounds were fired. The empty shell-cases splattered onto the floor of the flight deck. Then the nose guns, tail guns and waist guns gave short staccato bursts. Everything was primed.

Down in the nose Cunningham was over his bombsight talking quickly with Dean through the interphone. "We'll take that one in the center. The biggest of the lot."

On the water the ships had seen us. They began a wild zigzag course. Three freighters and two gunboats shifting evasively. Light flak from the gunboats began to burst below us. Dean made a wide circle getting set to give Cunningham a run.

Dean gave instructions to the gunners. The plane banked steeply and the top turret and left waist gun were in position to fire. The tracers fell short for the first few seconds and then began to arc onto the decks of the gunboats. Get rid of that flak! Clear those decks!

Dean turned the plane sharply and did a little evasive action. Slowly he was getting into position to give Cunningham his run. Then another bank and the guns were in position again. The ack-ack was breaking close now, right around the wings. Fifty calibre bullets sprayed down on the water and climbed the decks of the gunboats again. One flak gun went out of action. I heard Kernan give a yell.

Now we were settling down for the run. Bomb bay doors were open. I stood ready.

"Bombs Away!" Slowly they clicked off. One. Two. Three. One thousand pounders curving sharply into the sea. Heading for the freighter, the big one. I watched them go down. Wham! The first fell off to the right of the stern. The second was short, too, but the ship was turning into the third. It would take only one! The bomb hit with a terrific explosion right off the stern. There was a tremendous cloud of steam, then a billowing roll of black smoke. It had knocked in the side of the ship. The steam was from the engine room and the ship was on fire.

I watched the ship list sharply and then begin to settle. Smoke was pouring from the deck. That last bomb had been in there!

The ack-ack was still coming in stiffly and Dean banked to give the gunners another go. The plane shivered with the clatter of the guns and suddenly there was a small burst of flame on the deck of one of the gunboats. An incendiary had squeezed in there. The flak was becoming more feeble as our ammunition belts ran out.

I closed the bomb bay doors and went up into the cockpit. Dean was almost out of his seat with excitement. Bowerman had the wheel now. We circled to watch the ship sink.

Then I remembered the island and the enemy planes based there. If they had received a call by radio from one of the ships below it wouldn't take them long to get out.

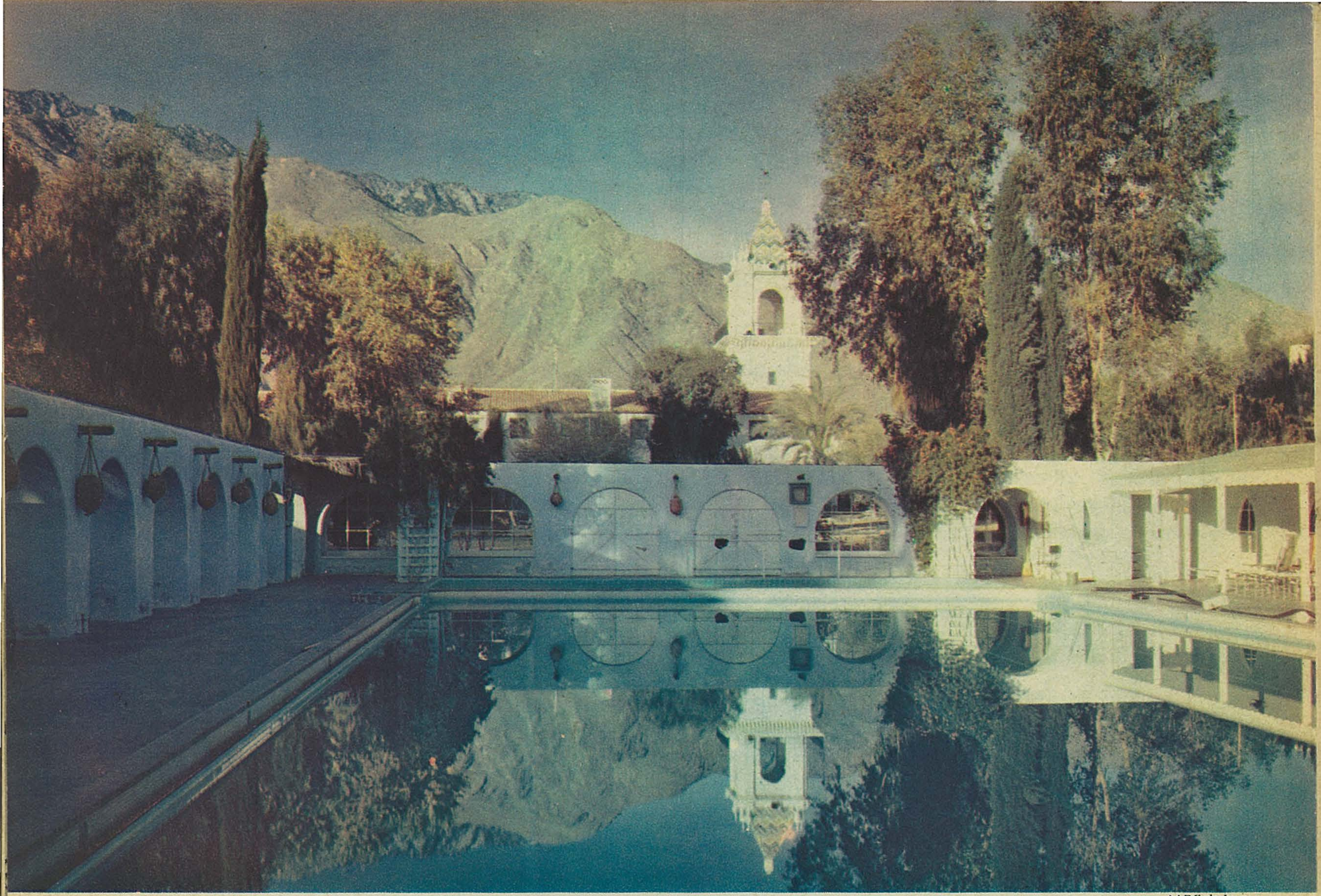
I leaned over and yelled in Dean's ear. "We'd better get out of here while we're still able to go home and tell about this. They'll probably have Zeros out here soon."

He looked at me surprised, as though he had just awakened. He had been so completely absorbed in the bombing of the ship that he wasn't conscious of anything else.

We sweated the first half hour but after that we knew we were all right. Either the ships had not radioed or the Zeros were off on a mission.

We sent a report to our base giving the location and the direction of the convoy. Soon fast flying B-25s and maybe some dive bombing P-40s from an advanced field would be out to finish the job we had started.

And that night the Jap commander of the besieged island would wait impatiently for the supplies he needed so badly.



AAF Kodachrome

The water in this swimming pool, where airmen recuperating at Torney take their exercise, reflects snow-clad San Jacinto, but its temperature is 85°.

BACK TO

WHEN his Liberator crash-landed in a rice paddy, Captain Curtis was pinned beneath a mass of metal in the demolished pilot's compartment, his left arm crushed.

The next thing he knew he was being dragged along the ground by a Chinese laborer who had seen the crash while working on a field nearby. That was the end of his 143rd mission, and the beginning of a long journey out of the Valley of the Shadow to a place beside the Still Waters, where body and mind are restored. It is a journey scores of thousands are successfully making.

The efficient Army Medical Corps divides it into two parts — healing and reconditioning. What has happened to Captain Curtis is typical, in many ways, of the treatment given any American airman who is hurt by war.

In the hospital to which Captain Curtis was first taken, at this secret China base, he was treated for two compound fractures of the left arm. Four weeks later he was hoisted into a Liberator and flown to a station hospital in India, where he went to the operating room again. He spent two more months on his back in India, then was placed aboard a hospital plane bound for Florida. There Captain Curtis was taken to the AAF Regional Hospital at Coral Gables, for ten more days of waiting. Then came his cross-country trip to California.

He arrived at Torney General Hospital at Palm Springs, in September of 1944, as a happy flyer, home from the wars at last, and not very far from his parents in San Diego. There he underwent a third oper-

In the gardens at Torney, in the bracing desert air, flyers on the way to new health can lounge in familiar army-gray pyjamas and red bathrobes.

AAF Kodachrome

USEFULNESS

By PHYLLIS GANDEE

How wounded airmen are brought swiftly back to health by the new Reconditioning techniques—how this Reconditioning differs from Rehabilitation—and how the Air Forces have pioneered in working out an idea revolutionary in its implications.

ation. After healing, the Captain was given a month's leave to go home. Before he left he was presented with a Purple Heart in formal retreat ceremonies at the hospital.

That was the ending of his actual sickbed experience. But it has been only a start of the Captain's hospital treatment at Torney. Torney is equipped with a reconditioning unit. This is a phase of the Army's medical program which is almost wholly new — a development of this war. Whenever a badly wounded airman is pronounced on the road to recovery, he is placed in active training designed to restore to him the maximum possible use of all his facilities. This program is a system of planned convalescence originally worked out by Col. Howard Rusk and Major Gen. D. N. W. Grant, Surgeon General of the Air Forces. It is called reconditioning.

The object of the treatment is to restore him as a soldier to active duty. There is an important difference between reconditioning and rehabilitation — one which not all the public understand. Here is how Colonel Augustus Thorndike, M.C., makes the distinction:

"The term 'reconditioning' has been selected advisedly. It is not to be confused with 'rehabilitation.' The latter is a function not of the Army, but — by law — of the Veterans Administration. Reconditioning pertains to soldier patients and is the responsibility of the Army Medical Department. Rehabilitation pertains to soldiers discharged as veterans to civilian status, and is the responsibility of the Veterans Administration."

In the days of other wars, Captain Curtis would have been permitted to think of himself as an invalid indefinitely. Under disuse all his muscles would have grown flabby, his arm might have grown stiff, even some of his spirit might permanently have withered away.

That is why Captain Curtis was encouraged at Torney to get up from bed as soon as possible — was even given a leave home, in the midst of treatment. Now an ordinary day for Captain Curtis runs like this:

At 7 a.m. a nurse wakens him and three other officers, with whom he shares quarters in a small cottage on the grounds of what was once the El Mirador hotel, before it became Torney Hospital. Curtis is now in a cottage because he no longer needs ward supervision. From its windows he can look out over the sunswept oasis of Palm Springs to the jutting mountains that wall this garden spot from the desert. Torney is rimmed by 105 acres of lawn and gardens where soldier patients can stroll, exercise, play and relax in the shadows of pepper trees.

Breakfast is served between 7 and 8 o'clock, in the main hospital. Some of the patients are on special diets. Captain Curtis now eats three full-course meals a day — he has gained 55 pounds since entering the California hospital. After breakfast he returns to the cottage to read the morning paper.

The patients are encouraged to keep up on daily happenings throughout the world — particularly war news. They have plenty of good books available — Torney's library contains over 6,000 volumes.

At 10 o'clock Curtis goes to "PT," as the patients have nicknamed physical therapy. Not considered a phase of reconditioning at Torney, "PT" is administered to the Captain in the modern clinic that is housed in one of the three ramps of air-conditioned hospital wards. A trained therapy aide applies heat to his left arm to stimulate blood circulation and tone up muscles long immobilized during the healing of fractures.

Muscle re-education treatments are now rehearsed, to train the dormant muscles to

Captain Curtis in basketball practice, in Torney's outdoor gymnasium.

function through various forms of exercise.

Curtis is given occupational therapy to accomplish a similar objective. In "OT," the men do work in which they must use the injured parts of their body. Captain Curtis works at card weaving. This improves motion of his left hand and arm, in which there is limitation of flexion and extension at the elbow.

After lunch Curtis goes to the post theatre with other convalescents who are no longer confined to bed. Here a lecture is often given to the men, as part of the educational program administered by an educational reconditioning officer. Other days, there are training films, conferences, classes, demonstrations. Subjects are generally military, to keep the men informed of the techniques of modern warfare. Study helps keep them mentally alert. One of the prime aims of reconditioning is psychological: to instill in patients a desire to return to duty as soon as possible — and to give them the physical means for doing so.

When patients can't go to the workshop, the tools and materials are brought to the beds.

Men lose their code speed after only a week of idleness. Convalescent AAF men practice.

Swimming usually follows afternoon study. It is a pet activity at Torney — and no wonder. Splashing around in azure blue water beneath a desert sun, the convalescents seem more a group of carefree vacationists than patients indulging in exercise. Daily calisthenics directed by trained physical instructors are also conducted at the pool; so far as possible, recreational and physical training programs at Torney are carried on outdoors. Palm Springs has a fortunate location for this: it has an average of 328 sunny days a year, with winter temperatures that vary only between 50 and 79 degrees.

The remainder of the day Curtis generally spends leisurely — reading, playing cards, listening to the radio, writing letters home. The Red Cross provides various types of individual and group recreation, supplemented at Torney by the Army Motion Picture Service, USO entertainment and other organizations. Sometimes he plays golf at the nearby desert course. As his condition improves, he will be assigned by the reconditioning officer to a more active program.

In the advanced reconditioning program uniforms are worn, and a military atmosphere prevails. The men are soldiers again, they go on long hikes, discipline is tightened. During the last week, they undergo several hours of strenuous exercise each day. Military subjects constituting a refresher course are given the men who will soon go back into duty. Eyes and teeth are examined and necessary work is done. In many cases, reconditioned men are released from the hospital in better physical condition than when they entered the Army. They then report for reassignment to active duty. Captain Curtis, under this program, will probably eventually be flying a Liberator again.

CAPTAIN CURTIS is only one of thousands of Air Force men who are being speeded back to health and normal activity by such care; and Torney is only one of many similar convalescent centers for wounded airmen scattered all over the country. Of all the casualties entering these AAF centers, 82 per cent go back to some form of duty in the Air Forces. And most of the 18 per cent who retire, because of such handicaps as missing limbs, are prepared to fill useful places in society.

It used to be said, by sad GIs in Army hospitals, that the only way to get out was to know a couple of Congressmen. That ancient gripe reflected the inertia of a system where soldiers going to a hospital practically dropped out of a living world.

It was in late 1942 that the Air Surgeon's office, aware of the defects of the old system, originated an experiment at the station hospital at Jefferson Barracks, Missouri. When the program began, some 50,000 men were "doing nothing but waiting" in military hospitals. Lt. Col. H. A. Rusk, then chief of medical services at Jefferson Barracks, initiated the activity that became, in less than a year, the new AAF Convalescent Training Program — a program that was extended to AAF convalescent centers throughout the country by the directive of General H. H. Arnold himself. In conducting it, the AAF is using some of the finest hotels and recreation centers our nation possesses.

Standing in one of the beautiful AAF "repair shops" at Pawling, New York, General Arnold recently looked at the crowds of happy skiers in the snow — all of them young men who had known the pain of flesh and bone torn away by steel — and he said:

"One of the most important advances to emerge from this war is the one you are seeing right here, all around you. It is a conception of rehabilitation that is entirely new. It is the idea of treating each man as an individual. It insures physical reconditioning and retraining, psychological adjustment, vocational guidance, and in the case of battle casualty, resocialization. We took these young people in the prime of life — the best that the country had to offer. It is our duty to return them to their place in the world as nearly perfect as possible."

If you visit a ward today in a typical AAF station hospital, you will find the beds marked by different colored cards. A red card means that the patient is still not allowed to get out of bed — although when his temperature has been normal for a day he may take mild exercises, lying on his back, of fingers, limbs, or neck. Men marked with an orange card can get out of

This airman, still confined to bed, does his exercises under careful supervision.

bed for ten minutes of mild muscle exercise. Those with green cards have the green light to everything — full vigorous calisthenics, an hour and a half of "ward fatigue," or actual work, each day; and any sort of sports and recreation for which their ability and temperament fit them.

Some centers offer 30 different sports, ranging from horseback riding to race track running. Some have classes in such creative work as drawing and painting. All of them offer technical instruction in keeping with a man's training and technical skills. It has been found, for instance, that without practice men lose their code speed in a week; hence special code receiving and sending sets are placed by a radio operator's bedside.

There is no regimentation, and all instruction is kept informal. The essence of the system is that it inspires men to want to take part. To keep a man's interest in living constantly keen is one of the vital goals; it is emphasized in every study to which even bed-bound patients are introduced. "What you learn when flat on your back may save your life when you're back in the air," is the spirit of the teaching.

In the words of Major General D. N. W. Grant, the AAF Surgeon General: "The program has had a tremendous soldier reception. Convalescents once did nothing but lie in bed, bored stiff. Now the almost universal reaction is, 'Why didn't somebody do this before?' "

It is estimated that the program so speeds up the return of wounded and sick men to health and full activity that AAF wounded have been saved some 25 million man hours in hospitals, in just 15 months' operation of the program. Not only has the AAF demonstrated that complete healing comes far faster when a man is kept interested; it has produced revolutionary results in healing theories which have now been confirmed by special experiments conducted at the University of Minnesota on healthy conscientious objectors, with their cooperation.

The men in the tests were put to bed and observed for six weeks. As reported by Major Donald A. Covalt, M.C., who is executive officer in the Convalescent Training Division under the Air Surgeon General, these tests showed that when a patient is kept in bed, "it takes more than twice as much protein to maintain in him a positive protein balance. It proved practically impossible to keep an otherwise normal patient in calcium balance while flat on his back."

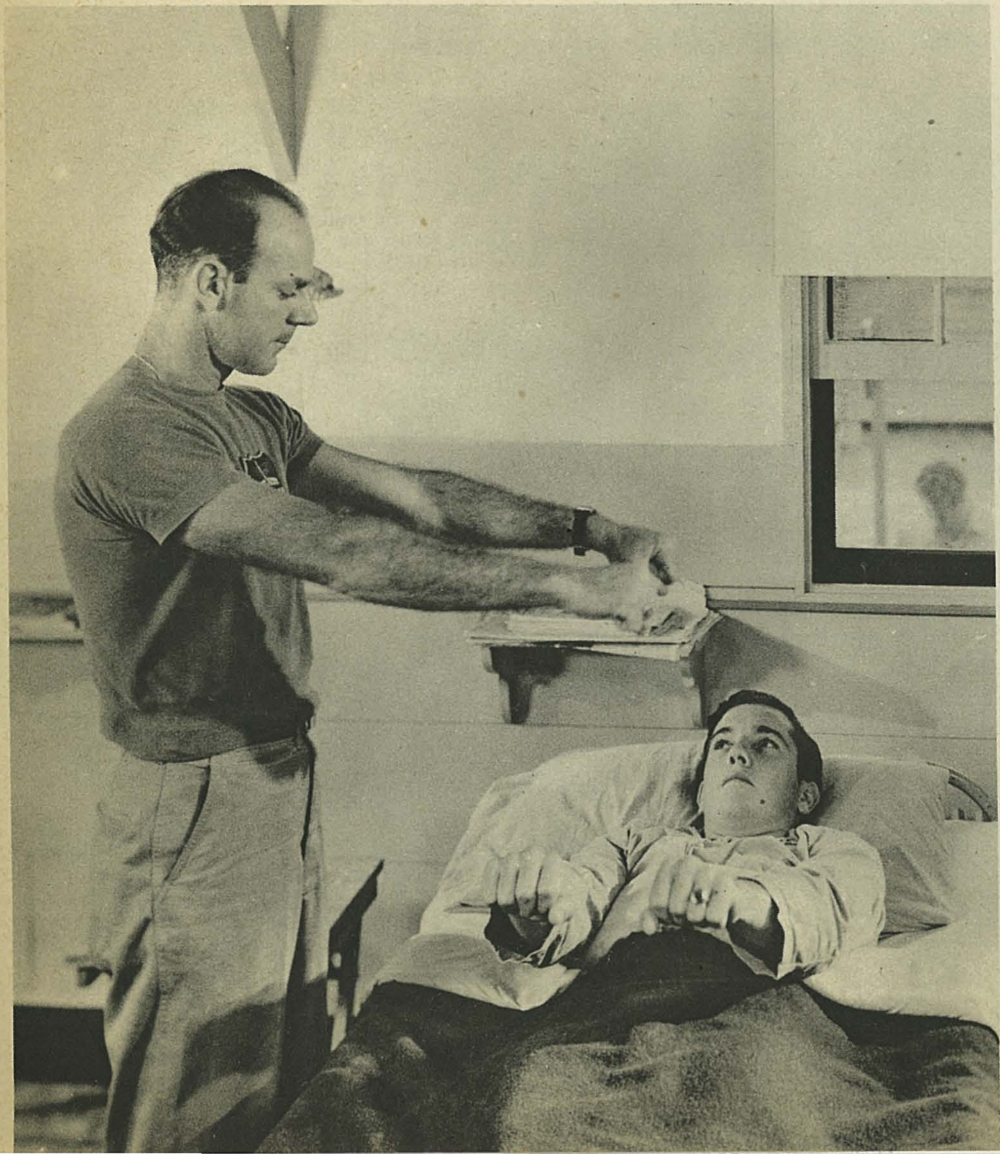
It was found that a normal man bedridden six weeks will have an 11 per cent average decrease in heart size, with his capacity for work going down steadily and rapidly.

Books to stimulate convalescents' thinking do an important job in the reconditioning.

Convalescents able to go to the shop still wear pyjamas and bathrobes at their work.

The AAF, under General Arnold, has taken the leadership, in its hospitals, in this new approach to restoring men to health and full life; but other military and naval hospitals are bound to be greatly influenced by the now-proved results. Further, postwar medical practice for civilians will undoubtedly adopt many of these new healing techniques. Thus, even out of the deepest cruelties of war experience, there comes new good.

Illustrations are AAF photographs



AAF Photo

AT 65° BELOW

SITTING on a desert base, a Liberator becomes so hot the metal can blister your hand. A few minutes later, in the substratosphere, temperature may drop to 65 degrees below zero, where cold metal will freeze to bare hands.

Despite a 195 degree inversion which affects all of a plane's 10,000 operating parts, Consolidated Vultee planes continue to perform satisfactorily. Such performance is not only vital for our wartime planes. It will be equally important in the great planes that Consolidated Vultee is planning for the post-war world.

Back of such performance is a vast proving ground. One of its important components has been the Cold Weather Test Detachment at Ladd Field, Alaska, which operates under the Proving Ground Command at Eglin Field, Florida.

Alaska is important to our airplane development. Many of our post-war air routes to Asia will pass through this part of our Arctic. Unreported numbers of planes have already flown via Alaska to Russia. To know how our airplanes stand up in the Alaska climate is vital.

Last winter at Ladd Field, while temperatures ranged to 65 degrees below zero, technicians of the Army Air Forces and various aircraft manufacturers conducted exhaustive tests to prove the operating efficiency of American airplanes.

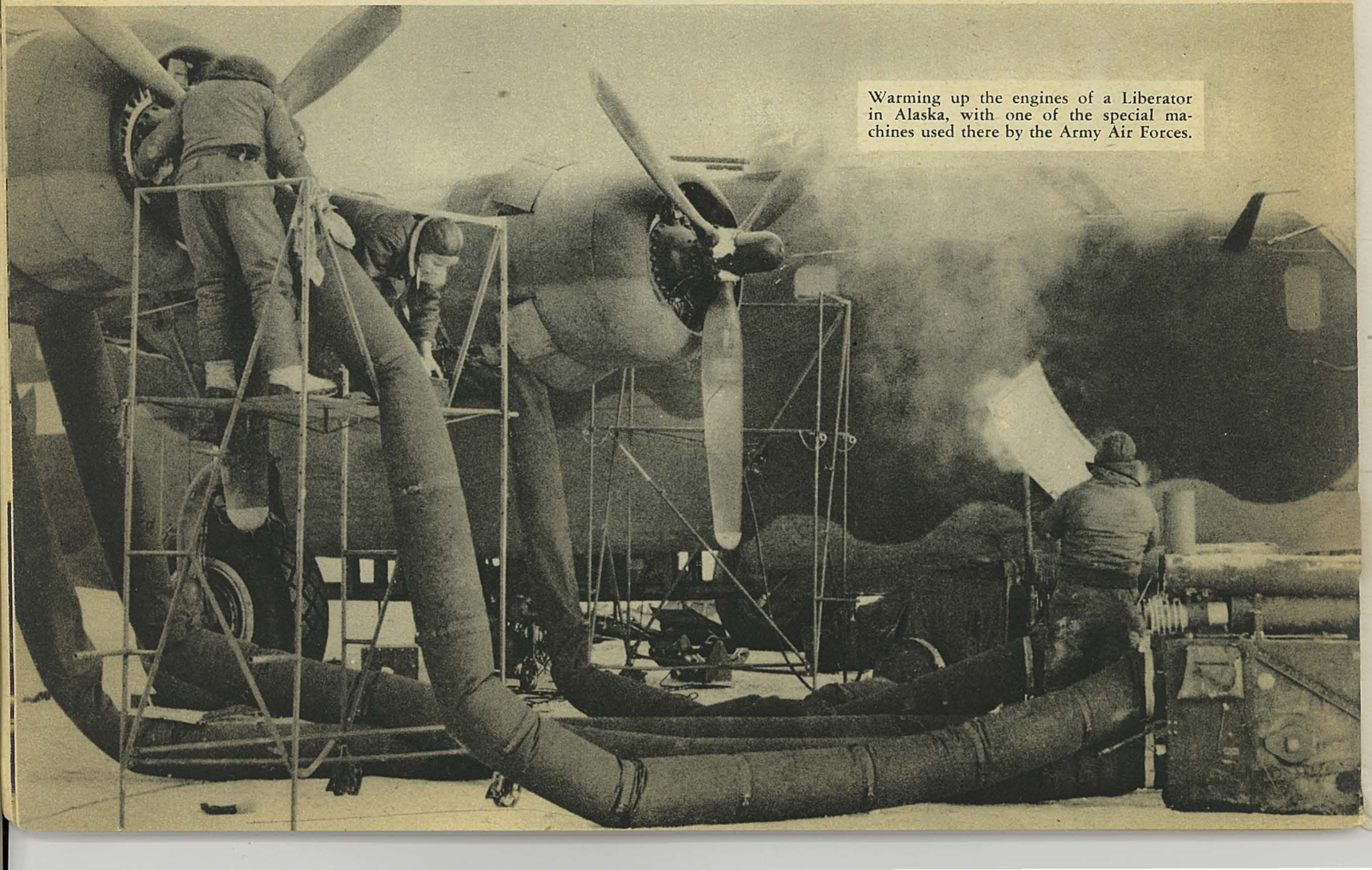
Forty different planes were used in the tests. Two Consolidated Vultee representatives worked with the AAF technicians — Charles L. Freel and G. J. Chikar, Jr.

The tests covered performance of entire airplanes and of all separate parts. In addition, accessories such as service trucks and tractors, cameras, clothing and food also underwent thorough proving checks.

Under great temperature changes, materials react differently. In a plane as long as the Liberator, for instance, the differential in expansion between steel cables and the aluminum fuselage poses a problem. In a temperature change of 100 degrees, long control cables contract one-half inch less than the fuselage, so the cables become loose. An ingenious hydro-mechanical regulator now maintains constant tension.

Tests at the Cold Weather Detachment proved completely the efficiency of the new thermal anti-icing system developed by Consolidated Vultee Aircraft Corporation, which not only eliminates the necessity of electrically-heated flying suits, and does away with windshield frosting, but eliminates the danger of ice formation on the wings.

AAF Photo



Warming up the engines of a Liberator in Alaska, with one of the special machines used there by the Army Air Forces.

Stinson "firsts"— before, during, and after

The name "Stinson" has been associated with personal plane aviation leadership ever since that name was first given to an airplane, back in 1926.

When this 1926 Stinson took to the air, it carried aloft an impressive number of "firsts."

DESIGN "FIRSTS"

Stinson was the first plane to combine the following features:

- An enclosed cabin
- The safety afforded by brakes on landing wheels
- The convenience of an electric starter
- The comfort of a cabin heater

PREWAR PERFORMANCE "FIRSTS"

These are Stinson performance "firsts" in the fields of commercial and personal flying:

- *First* to fly from Detroit to Tokyo . . . from New York to Bermuda.
- *First* to carry government air mail in China, Mexico, and in the Philippines.
- *First* to explore the Greenland route to Europe, present-day route of the North Atlantic Ferry.
- *First* to provide air mail pick-up service.

STINSON "FIRSTS" DURING THE WAR

Stinson's main wartime job has been the manufacture of liaison and training planes for our fighting forces — the Stinson Sentinel, or "Flying Jeep," the Stinson Vigilant L-1, and the Stinson Reliant AT-19.

A Stinson Sentinel, hopping from the deck of a carrier, was the first American plane to land on Jap-infested Pelelieu Island . . . only one typical instance of many similar occurrences when Stinson planes took part in invasions.

"Out in front" of the front, these sturdy little Stinson "Flying Jeeps" are serving as the "eyes" of the armed forces, as flying ambulances, on liaison duty.

As No. 1 plane of the Civil Air Patrol, the Stinson Voyager has carried out 65 per cent of the Patrol's wartime operations.

The Stinson Reliant AT-19 has been widely used as a navigational trainer by the British. And almost every U.S. airline uses Stinson planes to train and check pilots.

The Stinson Voyager 125 . . .

THE NO. 1 PLANE FOR TOMORROW'S PERSONAL FLYING

Here's the Stinson Voyager 125, designed for tomorrow's personal flying. It combines the *safety* and reliability of the prewar Voyagers with the *toughness* and *utility* of the Stinson "Flying Jeep."

The Voyager 125 carries three passengers and pilot. It is powered by 125-hp. engine, has a cruising range of 470 miles, maximum speed of 123 m.p.h., and a cruising speed of 112 m.p.h.

Stinson

The Aircraft Standard of the World

Division of Consolidated Vultee Aircraft Corporation, Wayne, Michigan

- The Stinson Voyager 125 is the forerunner of a distinguished line of planes for personal flying that Stinson will make as soon as war conditions permit.

We welcome inquiries about the Voyager 125 and about Stinson's post-war plans. Write to Private Sales Director, Stinson Division, Consolidated Vultee Aircraft Corporation, Wayne, Michigan.

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General of the Army Henry H. Arnold, Commanding General, Army Air Forces, whose portrait graced Plane Talk's front cover last July, is shown here wearing the five stars of his new rank, which was created for the first time in American history in December, 1944. This new portrait, reproduced from an AAF kodachrome, is published on this cover without logotype, to permit its framing.

Plane Talk

MAY · 1944

Why We Need 20,000 Airstrips • Air Luxury For Tomorrow
"Bombing Is Our Business" • Is That a Liberator?

Plane Talk

If you wish to share your copy of Plane Talk when you are through reading it, you may send it to a friend for 6¢. The simplest way of mailing is to slit a business-size envelope at both ends, roll up the magazine in it, seal and address and put on 6¢ in stamps.

MAY, 1944 • CONTENTS • VOL. II, No. 3

PUBLISHED BY CONSOLIDATED VULTEE AIRCRAFT CORPORATION

Is That a Liberator?
Sgt. William S. Friedman of the Air Forces Training Aids Division tells you some tricks in aircraft recognition 1

Why We Need 20,000 Airstrips
William A. Mara, now on the staff of Consolidated Vultee's Stinson Division, explains a post-war aviation requirement 4

Guardian Angel for Airmen
From Randolph Field, where Flight Surgeons are trained for our Air Forces, comes this story of their work around the world 7

Desert Depot
Fred Barton, *Plane Talk* correspondent writing from Cairo, introduces you to some boys who nurse wounded Liberators nearby 9

Our Sunday Planes
Captain Art Keil, CAP, took some handsome pictures to accompany his account of the extraordinary work of the CAP Coastal Patrol 12

Bombing Is Our Business
Lieutenant Horace Lee Williams, USAAF, chats with you quietly from an armchair in the courtyard at Shepheard's Hotel 15

Air Luxury for Tomorrow
Here is the fullest account that has appeared to date of Consolidated Vultee's new airliner for post-war travel 16

Hero's Return
The Squaw, which has come back safely from more than 70 missions and has seen two crews decorated, is introduced in full color 20

Counselling the Woman War Worker
Mary Shipman Jackson, Administrative Assistant to the Director of Industrial Relations, explains the Consolidated Vultee plan 21

Air Sailors in England
The boys who fly the Navy's Liberators are really sailors, speaking sailors' lingo and wearing sailor blues 22

Two Reports on our War in the Pacific:

Problems in Bombing Japan
Randall Gould, of the *Shanghai Evening Post and Mercury,* draws on his long Far East experience to tell how the Japs can take it 24

Air Leaps Toward Tokio
Major General Willis H. Hale, Commanding General of the Seventh Air Force, reports we are getting there in Liberators 28

No Milk Run
Arch Whitehouse tells in his breezy fashion how he spent more time than he'd counted on with some Liberator men in England 30

Front Cover

Navy Liberator in the Pacific

The Navy Liberator, or PB4Y, which in its essentials is the same plane as the Army Liberator, or B-24, is pictured here in a reproduction from an official U.S. Navy kodacolor film. The Navy is using land-based Liberators in steadily increasing numbers — for submarine patrol in the Atlantic, for assault on Japanese strongholds in the Pacific. For other Navy pictures, see "Air Sailors in England."

Back Cover

Bombing of Wake Island

This is an official U.S. Navy picture of one of the numerous bombings of Wake Island, which has had its Jap installations blasted by Liberators time and again since the Japs occupied it in December of 1941. Under Secretary of the Navy Forrestal recently announced the Navy would have produced for it a total of 28,000 combat planes in 1944, compared with 13,500 in 1943 and 238 in 1939, and that the air and sea strength of the Navy must be maintained at high level after the war.

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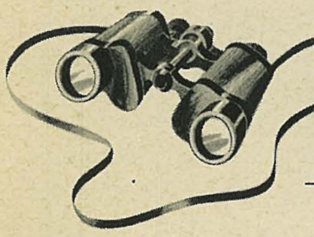
Liberator over Mount Vesuvius, shortly before the volcano's eruption. (A.A.F. Photo)



IS THAT A *Liberator?*

BY SGT. WILLIAM S. FRIEDMAN

Air Forces Training Aids Division

ARE you one of the many adults who secretly feels nonplussed when even your children can name a plane overhead, while you only wonder whether it's a bomber? "Yes, Pop, it's a B-24 Liberator. But is it a D or an E?"

You are in good company — don't feel embarrassed, and don't despair. The children have an initial advantage over you which has now been analyzed and put to adult use. The Army has been at work on your problem for its own sound purposes.

The advantage that children have isn't their better eyesight, but just a way of using their eyes. You, with your adult mind, pause to analyze what you see. The child, on the other hand, synthesizes details into swift, total impressions. Were it not for this gift, children would doubtless be overwhelmed by the complexity of the world they are born into, before they ever begin to grow up.

Now the Army became interested in the child's effective technique of observing, just because our airmen must recognize planes with instantaneous accuracy. Every man that rides a bomber, straddles a fighter plane or squints through sights at the enemy must be an expert in recognition. He must be able to tell the nationality and name of an approaching plane as soon as the enlarging spot in the sky draws close enough to have its form develop "personality."

Consider, for instance, how fast the nose-turret gunner in a B-24, cruising at 240 mph, has to make up his mind about a fighter making a nose-on approach at 400 mph. Is the fighter hostile? His apparent approaching speed is 640 mph. The man in the turret has no time for debate and analysis. He must simply reach into his memory and rapidly associate the approaching form

B-24 LIBERATOR

LANCASTER

HALIFAX

STIRLING

with a mental image stamped in his mind. He must not "identify" the plane; identification is a process of assembly of details. He has time only to recognize the "personality" of its total form, just as one would recognize familiar people on the street.

The Army Air Forces have now developed a program for such recognition training which, in recent months, has considerably reduced the number of combat accidents in our active theatres of operation. (*Combat accidents* is euphemism for a plane shot down by our own guns through faulty recognition.)

Early in the war, an identification process called WEFT was used. Aircraft recognition was taught by means of wall charts and similar graphics, which examined the *W*ing, *E*ngines, *F*uselage, and *T*ail of the planes being studied. With this approach the student was using a purely adult and intellectual method of learning. First analyzing a given airplane, he then compared the results of observation with memorized references, all according to a set pattern. This intellectual approach was just too slow.

Today the Army's basic recognition program is a system meant to restore youthful facility for unit perception. And it is getting swift results.

The basic course takes between 17 and 25 classroom hours, and acts as primary school for all recognition training. While the details of the course vary from post to post, principles are generally alike.

MOST of the "professors" at the Richmond, Virginia, school where recognition instructors are usually trained, are graduates of a special Army-Navy course in optical psychology. At Richmond, they teach with such simple classroom tools as the flash-meter, shadowgraph and ball-opticon.

The ball-opticon is just the old magic lantern, through which all kinds of pictures can be projected on a screen — clippings from magazines, drawings, and ordinary photographs. The shadowgraph is merely a taut sheet-screen with a light behind it; plane models mounted on a stick are interposed between the sheet and light to throw a silhouette-shadow on the sheet. The flash-meter or tachistoscope, used in most fixed school installations and in the better established field units, consists of a common 35-mm slidefilm projector, fitted with a leaf-type shutter, so that the length of the exposure can be accurately timed up to 1/100th of a second.

In teaching recognition with this equipment, the Army really has two jobs: it must first de-educate the student of his tendency to observe details piecemeal; it must then teach him, by flash observation training, instant recognition of airplanes he is required to know.

These planes are presented in the order of their tactical importance. During his early training the student studies "first-line" planes. It does not take much urging to make a gunner headed for the Southwest Pacific Theatre show interest in Zeke — the Mitsubishi Zero.

The instructor tells his class the plane's military purpose, dimensions, power plant and performance, armament, and bomb load. As these dimensions are given, a picture or silhouette of the plane is flashed on the screen.

Daily, the exposure is shortened. During this shortening process, the eye is trained to perceive the complete impression of the entire plane, devoid of minor details. "Mass personality" of the airplane begins to emerge; the exposure shortening cumulatively inhibits any adult analysis. At the same time, the pictures exposed are gradually made smaller on the screen, simulating greater distance. By the time this phase of the training is complete, identification by analysis is out. The student is actually recognizing planes by form.

During the final phase of training, pictures are reduced in size to simulate the distance at which a gunner must make up his mind about the identity of an oncoming airplane, and length of exposure is reduced to a like interval.

The average American adult, wishing to "catch up with the youngsters" in airplane recognition, has to lay out a course of study for himself that is midway between the method of Sonny and the typical air gunner. Physically, his job is like the boy's. He still has the privilege of standing on ground and surveying a friendly object with time to spare. But psychologically, his task

FOCKE-WULF 190

DAUNTLESS

B-26 MARAUDER

"ZERO"

P-39 AIRACOBRA

CORONADO

43 PLANES YOU SHOULD KNOW

ARMY PLANES

- Consolidated Vultee Liberator Bomber (B-24)
- Consolidated Vultee Liberator Express (C-87)
- Boeing Flying Fortress (B-17)
- North American Mitchell (B-25)
- Martin Marauder (B-26)
- Douglas Havoc (A-20)
- Lockheed Lightning (P-38)
- Bell Airacobra (P-39)
- Curtiss Warhawk (P-40)
- Republic Thunderbolt (P-47)
- North American Mustang (P-51)
- Northrop Black Widow (P-61)
- Curtiss Commando (C-46)
- Douglas Skytrooper (C-47)
- Douglas Skymaster (C-54)

NAVY PLANES

- Consolidated Vultee Catalina (PBY)
- Consolidated Vultee Coronado (PB2Y)
- Consolidated Vultee Liberator (PB4Y)
- Grumman Wildcat (F4F)
- Vought Corsair (F4U)
- Grumman Hellcat (F6F)
- Vought Kingfisher (0524)
- Martin Mariner (PBM)
- Douglas Dauntless (SBD)
- Curtiss Helldiver (SB2C)
- Curtiss Seagull (SO3C)
- Grumman Avenger (TBF)

BRITISH PLANES

- Bristol Beaufighter
- Bristol Beaufort
- Handley Page Halifax
- Hawker Hurricane
- Avro Lancaster
- De Havilland Mosquito
- Supermarine Spitfire
- Short Stirling
- Hawker Typhoon
- Vickers-Armstrong Wellington

FOUR GERMAN PLANES NOW SEEN IN THIS COUNTRY

- JU 88
- Focke-Wulf 190
- ME-109
- ME-110

TWO JAP PLANES NOW SEEN IN THIS COUNTRY

- "Zeke" — Zero Type 0
- "Hamp" — Zero Type OF

is like the aircrew member's. He, too, must surrender his long-cultivated analytical approach and reach childlike into his memory for a total-image association.

Like any other form of study, three basic units are required; motive, equipment and practice.

To learn anything well, you must start with an impelling motive. To the child, the airplane embodies the whole fascinating world that leaps out of still and motion pictures, and shouts itself over every radio news broadcast of the day. Liberators carry crusaders who level Ploesti and blast Berlin; Mustangs are the steeds of knights-errant battling to free a continent.

The gunner feels similarly strong urges. To keep from shooting at his friends, while spotting the enemy without a moment's loss, is the gunner's life insurance.

Your own motive is — shall we say? — just a desire to keep up with Sonny. All right. If your desire is strong, the rest will be easy.

Your equipment will have to be a compromise. Army recognition instructors issue to their students a set of flash cards — pasteboard strips a little larger than a playing card. Printed on one face of these are silhouettes of the front, side and top view of the airplanes on the Army's operational list; on the other face is a regular half-tone picture of the plane, with its name and serial number.

The Army uses these cards as a homework review aid. You can make up a set of them yourself. Virtually every important aviation magazine publishes three-view drawings for technical or recognition purposes. Most of them also get out a special issue on an annual or semi-annual basis, containing three-views of practically all operational types. Send for a back copy, and you can get all the pictures in one fell swoop.

Accompanying this piece you will find a suggested operational list of planes you'll want to know. Study the American types first, as these are the ones you will probably have the most opportunity to observe. Follow these with the British, Russian, German and Japanese. Start keeping a scrap book. Sonny probably does and, confidentially, so does the gunner.

Your pictures, as you collect them, should be pasted on one side of cards uniform in size. Allot a certain amount of time per day — say, fifteen minutes — to the study of these airplanes. Begin work by selecting a "plane of the evening." Locate all the views of it you can find, and study these from as many angles as you can — half-closing your eyes, just as an artist does, to absorb the total impression of the mass form, rather than details.

Then flip rapidly through your flash cards, and see if you can pick out the proper plane in your first run through. If you can, reshuffle the cards, and try it again.

During the early phases, when you have only a few planes memorized, this flipping through may seem a waste of time. But remember, you are simultaneously familiarizing yourself with many planes. And the next day's plane may not look so unfamiliar to you if you have seen it a couple of times during your flash card review. The next evening, repeat the operation, this time with a new card, discarding all you can actually recognize the first time around. Continue this process until you have mastered all the planes in the set.

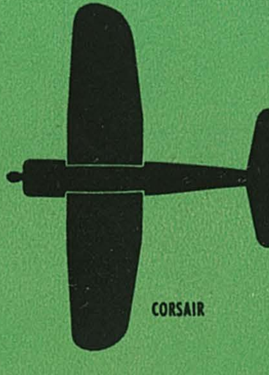
You can test yourself by running through your daily paper or your weekly picture magazine. Actual combat photos are sometimes fuzzy, and if you can spot a Navy F6F (Grumman Hellcat) in some of the pictures that come out of the Pacific, you can consider yourself pretty good. Newsreels actually taken in battle can give you as good a workout as any. Some of them are a fair forecast of what the sergeant-gunner is destined to receive

In your studies, remember that while your interval for recognition isn't split-second, like the gunner's, you have to shoot for a short interval. For a ground observer, a full second is excellent, three seconds are good, and ten seconds are just passing mark (dub calibre among the kids).

The best indoor synthesis you can muster is having someone turn your cards up at twice an arm-length. This test is for standard cards, on which the ships appear to have about a three-inch wingspan.

The night you think you are good, ask Junior to shift cards for you.

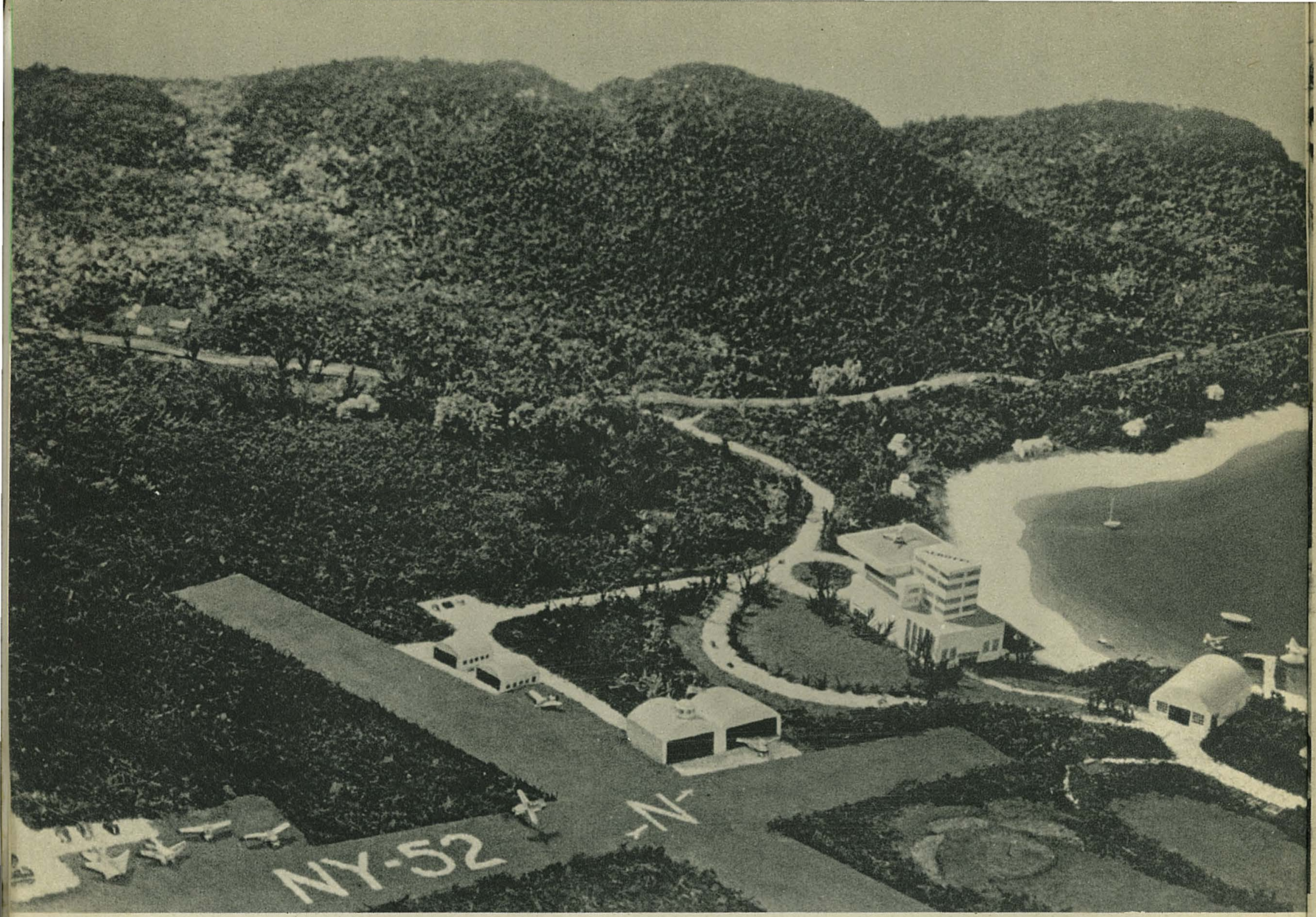
P-47 THUNDERBOLT


CORSAIR

MESSERSCHMITT—110

MESSERSCHMITT 109F

JUNKERS—88



Here, as in the picture on the opposite page, the intent is to show how self-supporting projects can be developed around airstrips designed for civilian flyers. Above is a suggestion for a country-club hotel. The "X" strip has a surface of well-drained turf, surrounded by hangars and service facilities, and generous parking areas for cars and planes. A hangar for float planes is provided on the lakeshore adjoining the swimming beach.

Why we need 20,000 Air Strips

BY WILLIAM A. MARA

Photographs from Models by Joseph R. Carleton and Robert Kittredge

IN one way or another a large section of the public has concluded that the post-war sky will be filled with personally-owned airplanes. People correctly assume that great strides have been made in the design of easy-to-fly airplanes for the family. Helped along by enthusiastic writers they foresee an airplane in every garage and worry about solving the problem of "air traffic."

All of these bright dreams overlook the obvious. Everyone concedes that the plane is the swiftest method of transportation, but — people want airplanes in which they can go somewhere. They are not going to buy planes just to fly around some local airport on Sunday afternoons. There will have to be lots of airports in lots of places. Nor will a few widely-scattered big airports serve the need.

That is why use of the personal plane will literally grow from the ground up. Inherently, the air is a limitless road which runs directly from here to everywhere. But it will be comparatively useless for civilian pilots until we have many more plots of ground available for their take-offs and landings.

The war has brought home the fact that today our very national existence depends on airports. England is such an airport, vital to our victory over Germany. Bloody Tarawa, Guadalcanal, Kwajalein, Truk, and hosts of islands yet to come are being made into airports essential for the attack on Tokyo. America pays dearly for such airports today, both in blood and dollars. But in the post-war era, wise planning and comparatively few dollars will give us a nationwide network of air roads and aerial markers for easy navigation that will make the airplane's advantages possible for millions.

In many ways the aviation industry stands where the motor car people were in 1918. There were vast production facilities then, and also the know-how to build better automobiles at low prices, *provided* volume could be secured. But — to get volume there had to be wide usage. So the Good Roads movement was born, and taxpayers were persuaded to finance it. How the automobile improved our way of life and created tremendous national wealth and employment is too well known to need repetition.

The airplane will offer after World War II a further means of bettering our living habits, enhancing our comforts, and of creating a new source of employment and national wealth. We shall have the designs, the production facilities, the know-how.

But engineers and production experts cannot carry through the job alone. Air roads must be provided to create the wide usage which will support production volume and low airplane prices.

This is a job which the public alone can do. You who read this article, as a member of that public, can be of enormous importance and help in your community. The smaller the town you live in, the more vital the job, and the greater the need for telling your neighbors about it.

Here's why. We shall come out of this war with about 3,000 airports of all kinds. A lot of them have been built for airline planes and for military operation. These are the big ports. They have long concrete runways to handle heavy ships. They are comparable to Grand Central Station. They necessarily cost a lot of money. Of course, the Grand Central cost a lot of money, too.

But these are not the types of airports which the small town can afford, or in which the personal airplane owner is even interested. Heavy traffic conditions at such ports will always put him at a disadvantage there.

What the family plane will require is the "Air Strip" in great numbers. Along with the air strip, the pilot will need a simple system of aerial markers or road signs. These will tell him where he is at any time, and so permit him to go from here to there without learning a complicated system of navigation, and also without depending on rivers, railways, highways and towns as a method of steering his course.

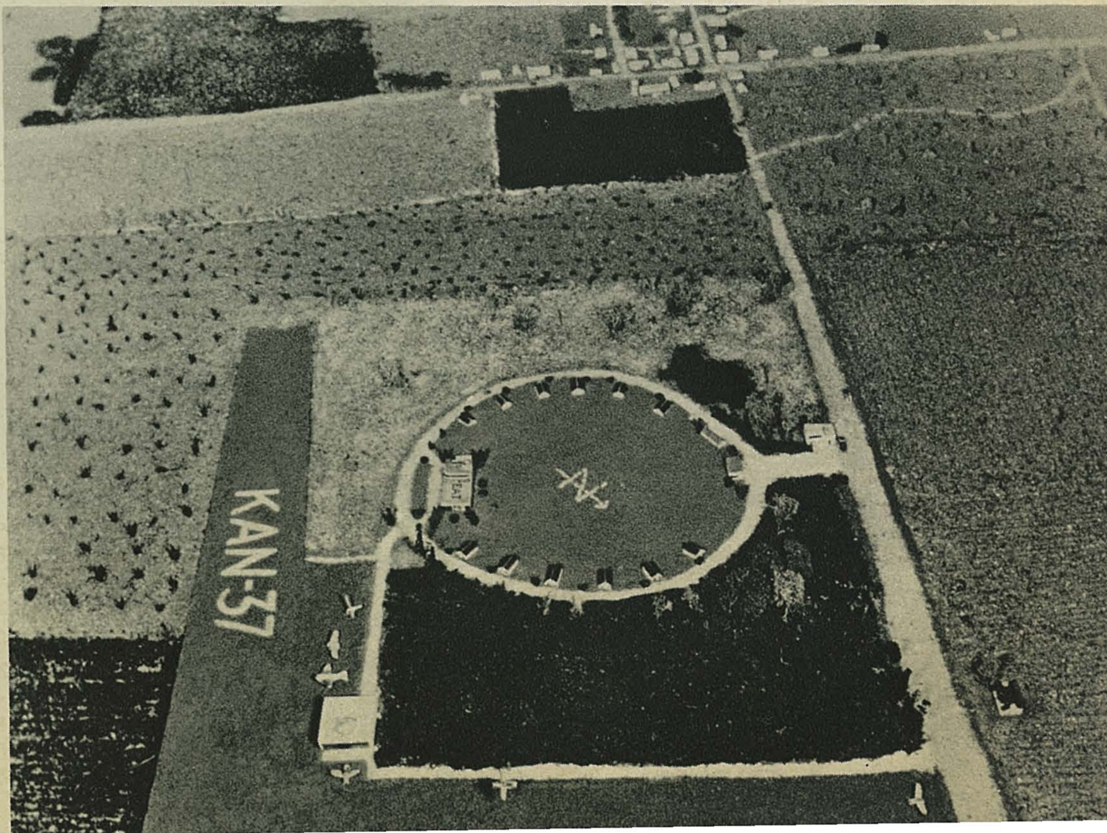
He must have these air strips at frequent intervals so that he is never more than a few minutes flight away from one. In this way there will always be a place to land in the event of bad weather. Large cities must have air strips conveniently located in a number of sectors to enable planes to land and take-off close to John Public's home or office. Slum clearance projects will become air strips in some towns. Golf courses, recreational areas, suburban developments, and hosts of other places must have air strips to attract and serve the personal plane.

WHAT is an air strip? Essentially it is a level grassy piece of land, perhaps 150 or 200 feet wide, and from 1,500 to 2,000 feet in length. It need not be hard surfaced, like our highways. It does need to be well drained. And above all it must be adjacent to a highway. Personal planes do not require the long distances for landings or take-offs that airliners demand. Consequently, the air strip should be confused neither in size nor cost with the airport for airline use.

Shapes which air strips may take are various enough to fit almost any available piece of land that has the required dimensions. Basically, they fall into four general patterns, depending on the land and money available for construction. These patterns are the "▬", the "T," the "L," and the "X." All except the first permit landings and take-offs into the four basic wind directions. But even the simple straightaway "▬" type will do in a pinch, for the post-war plane will be built with a tricycle landing gear (a wheel in front with the two main wheels beneath the body) which will enable safe cross-wind landings and take-offs.

Around the post-war air strip will grow airplane servicing facilities, a hangar, a restaurant, a sales room, flying club quarters and even a few tourist lodges for the traveler who does not wish to go to the city. Several of the larger oil companies are already making plans for service stations, so located on air strips, that the same station can fill the tanks of both the motorist and the personal plane owner.

Studies show that 20,000 air strips will be required to give us a national system of



Here is a possible "tourist court" development on a public highway, with an "L" shaped strip adjoining. Located a mile or two from the heart of a small town, such a development could have several sources of revenue: cabin and lodge rentals, food sales, servicing of planes and autos, sales of gasoline for both.

air roads. This number would provide for dividing the country into checker-board squares, with an air strip at each corner of every square 10 miles long in each direction. Such a 10-mile system of squares has been selected because each minute of latitude and longitude represents an average of 10 miles, and latitude and longitude will tie in with our national air marker system to permit the family pilot to find his way about without any difficulty.

Of course, mountains, swamps, and other obstructions will interfere with an exact 10 mile spacing. But the air strips should be located as nearly as possible in this pattern.

The cost is estimated at 90 million dollars. That sounds like a large sum of money, but it is less than twice the cost of La Guardia Airport, and is infinitesimal compared to the cost of a national highway system where a single mile of highway costs an average of $25,000. Compared to the task of paving the United States, which the automobile industry faced in 1918, the present air strip job is one which will scarcely touch the individual taxpayer's pocketbook.

The Civil Aeronautics Authority has proposed a project calling for 6,000 fields, which calls for Federal, State and Municipal cooperation in financing. In the end we shall need far more. However, as a start the plan is suitable, but limited in scope.

Oftentimes land with little commercial value could be used. In small communities with probably light traffic, good turf well drained is a perfectly satisfactory covering for an air strip. If the community supervises the land location, the facilities provided there will doubtless pay their own way in most instances.

Steps to bring air strips into being are being undertaken by many agencies.

The Personal Aircraft Department of the Aeronautical Chamber of Commerce is launching a campaign to publicize the air strip and to set up a body which will work with individuals and communities on their specific problems of location, drainage, grading, soil stabilization, and seeding.

The Planning Commissions of various States and Cities are also becoming active. The extent of their success will determine not only the use you can get from your postwar personal plane, but the price at which it can be sold to you.

Planned program reduces accidents.

SAFETY THROUGH SYSTEM

"Hazardous machinery? You're looking at a floor full of it. There are 106 machines in this department, each one a potential maimer—unless the operator knows what he's about and is wide awake."

That's the way the foreman of the sheet metal department at Vultee Field puts it when you talk to him of hazards and safety measures worked out to combat them.

Such an attitude, plus a plan, has brought to this department a winning record for safety. The rate has dropped from twenty-four lost time accidents in 1941, and sixteen in 1942, to nine in 1943.

Back of that record is a story of patience and experiment, going back to the time when the aircraft industry was attracting thousands of inexperienced persons, many unable to tell you the difference between a punch press and a cookie cutter. Machinery and its power was a mystery to them. All they knew was that you pressed a button or stepped on a pedal and bingo! – the operation was complete.

A raw newcomer was generally careful. But after he had gained a certain amount of proficiency, he'd get careless. Then things would happen. When you're working with machinery they can happen fast.

Plant safety engineers made valiant efforts to stem the ever-increasing accident tide. By and large, these efforts were rewarded. But the accident rate was still high in the sheet metal department with its punch and hydro presses, its saws, routers and shears, its sanders, grinders and shapers.

At this point the foreman in that department at Vultee Field took the bull by the horns. He chose eight of his best men to serve on a departmental safety committee – four from the day shift and four from the night shift.

The duty of each member is to report any unsafe practice of mechanical irregularity, and offer suggestions for improvement.

Good housekeeping and the enforcement of orderly shop routine are taken as the foundation of safety practice. A report sheet has been drawn up listing any factor that might be a safety hazard. It deals with machinery and its setup, with orderly arrangement of material, with cleanliness and neatness, with efficiency of shop procedure, with proper loading of conveyors, with the enforcement of traffic rules and with the proper condition of storage facilities, including tote pans, skids and tubs.

For one hour each Monday members of the department safety committee make a complete tour of their shop, checking off questions. Items listed are things like: "Are all guards in proper place on all machines?" "Are women using adequate hair covering?" "Is there any oil or water on the floor?" "Are aisles open?" "Is there any obstruction in the way of fire equipment?"

In addition to the answer column there is a space reserved for remarks. When the completed report is turned over to the foreman, he passes it to his assistants, who sign it and proceed to remedy derelictions.

A meeting of the whole committee is held once a month to discuss problems that have come up, and to submit and adopt suggestions for their solution.

A steady decline in the accident rate has been effected. The safety program in the sheet metal shop has now made every employee "safety conscious," and has been adopted in various other departments.

Flight Surgeons live in the field with their men, share the hardships of soldiers' routine.

GUARDIAN *Angel* FOR AIRMEN

He's also called a Flight Surgeon, but he may not be a surgeon at all. He does wear wings; saves lives.

"DOC" opened his office in an eight by ten foot room in the corner of what had been a nuns' dormitory.

He treated ailments of enlisted men and officers and held daily "sick call" for hordes of natives who marveled at the white man's magic. "Doc" and four enlisted men waged war on the mosquito population, reducing mosquitoes from fifty to each square foot to one per square foot.

He organized a volley ball league, supervised construction of a mosquito-proof reading room, and begged enough paint for the men to brighten up their weather beaten quarters.

"Doc" wears a pair of golden wings. He is a Flight Surgeon.

The Flight Surgeon, whether in a nuns' dormitory in New Guinea or an Alaskan Quonset hut, has a full time job in keeping his men physically and mentally fit — the men who fly and fight, and also those who labor on the ground to send the air squadrons on their appointed missions.

The complex makeup of the men who are safeguarding the physical and mental health of the Army Air Forces is best described in the words of Brigadier General E. G. Reinartz, Commandant of the School of Aviation Medicine at Randolph Field, Texas. The General states:

"The Flight Surgeon is a combination of doctor, lawyer and priest — with a strong leaning toward the mental aspects of medicine."

General Reinartz observed the work of graduates of the famous Randolph Field school during a tour of North Africa. He returned from the battle front with high commendation for the manner in which alumni of the school were caring for the men.

"The morbidity rate has been lower than we ever hoped for," the General states. General Reinartz found medical officers turning stables into the best quarters in Africa. "The doctors took over old French winery stables," he says, "cleaned out the cobwebs, washed down the walls and sprayed the interiors with gasoline. Then they ignited the gasoline to sterilize the structures. The buildings were then furnished with double-deck bunks in each stall and bin. The thick concrete walls maintained cool temperatures during the terrifically hot days, and provided warmth for occupants during the bitter African nights."

These Flight Surgeons are civilian doctors of yesterday — converted into all-around medical and psychological experts at the School of Aviation Medicine at Randolph Field.

Any doctor who attains his gold wings bearing the insignia of the medical corps, that mark him as the airmen's guardian angel, is the graduate of an ordeal. The rigors of college and internship are as nothing compared to the intensity of Randolph Field training.

In nine weeks there each M.D. not only reviews all medical knowledge pertinent to aviation medicine, but must master a curriculum designed to fit him for assignment to a combat squadron. His major studies include high altitude physiology; use of oxygen and oxygen equipment; diagnosis and treatment of specialized conditions resulting from flying; aero-otitis media — the effect of air pressure changes on the middle ear and the Eustachian tube; aerosinusitis, which may result from the effect of altitude on the sinuses; and the effects of flying on the whole psychological makeup of man.

On completion of this course he is rated as an "Aviation Medical Examiner." Then, possibly a year later — or sooner if he is in a combat zone and has proved his ability — he is given the coveted rating of "Flight Surgeon."

THE hangar line fades into the distance behind battle-bent bombers. Tail gunners see the red-crossed "meat wagon" sitting on the ramp. The gunners, and every other man on the mission, know that "Doc" is standing beside the ambulance to see them off, and will be there when they come back. "Doc" will have a hot or cold drink awaiting them, and if any of them has stopped some shrapnel he will see they are given the best care and treatment within human resources.

The Flight Surgeon isn't earth-bound. He makes regular non-combat mission flights with the crews under his charge, in order to share with them the discomforts of high altitude and all other vicissitudes of flying. In cramped, sometimes bitterly cold quarters, the Flight Surgeon shares their hardships on the ground, too.

His courage under fire has been proved many times. The experience of Major Charles A. Baumhauer, now a Flight Surgeon at the School of Aviation Medicine, is more or less typical.

Baumhauer's home is Whistler, Alabama. His squadron was the first American unit to be assigned to duty at a New Guinea base. The field consisted of a narrow flying strip, two red-painted galvanized iron buildings and a few shacks. The medical officer and his four-man crew visited a nearby deserted village. Dishes, wash basins and other precious items were collected by the "forage" detail, to improve living conditions at the jungle base.

Handling of more seriously wounded or sick men at the base presented complex problems. The nearest hospital was 30 miles distant; the route was a rough road through mountainous territory. Only the most sturdy patients could survive the bouncing ambulance ride to the hospital. Hence serious cases were flown to Townsville, Australia, 800 air miles away.

The 29-year-old officer soon learned that his problems concerned not only serving airmen and ground crews, but cultivating the good graces of the natives. Sturdy warriors came from the jungles daily to answer "sick call."

All of the natives complained of "bad legs." Regardless of where they had a hurt — head, arm, stomach, or foot — they described their ailments as "bad legs." They apparently enjoyed medical service. After Major Baumhauer patiently treated each one until finally cured, he had to use diplomacy to convince his customer that it was no longer necessary to return for further treatment.

The squadron benefited from the doctor's work with the dark-skinned people, who offered their services for whatever projects the Americans needed completed. The physician included in his duties everything from sanitation to surgery. He selected sites for "plumbing," was instructor of classes for all the men in hygiene, also acted as morale officer.

For one piece of work with his men, he was awarded the Silver Star. "Doc" had taken refuge in a foxhole one day, during a raid in which 80 Jap bombers came over to blast his base. At the height of the raid, a badly crippled B-25 came in for a belly landing. A Zero was following on its tail, pouring in machine gun fire. Baumhauer disregarded the Jap bombers and the Zero, sprang out of his foxhole, and sprinted across the bomb-splattered field as the ship skidded to a stop.

Aboard were several wounded airmen. "Doc" labored until all the men were safely removed. For his work that day, the 29-year-old officer wears his Decoration.

Baumhauer returned to the United States after 17 months overseas and today he is using his experience to train other officers for their future assignments in the world's combat theatres.

ANOTHER young officer at the Randolph Field school who learned the hard way is Captain E. C. White of Wayne, West Virginia. Captain White went to England with a ground personnel unit, worked unendingly in his squadron as the men awaited transfer to the North African theatre. His unit was one of the first to establish an air base in North Africa on the heels of the invasion forces. Winter rains and cold brought hardships and some sickness.

Torrential rains washed the men out of their pup tents at least twice a week. The officer suggested the men use discarded packing cases to build stronger shelters. Soon the entire outfit was sleeping dry and warm, even if not luxuriously.

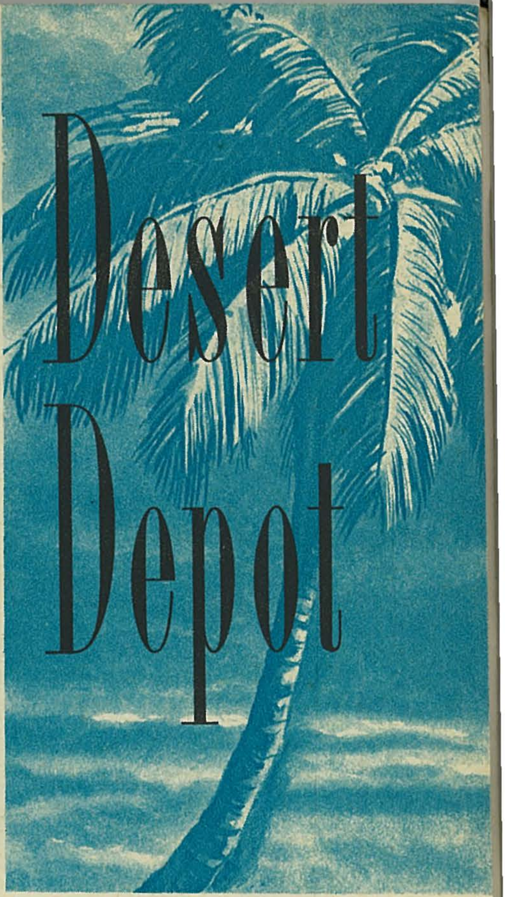
Service in the British army as a volunteer physician fitted Captain C. D. Howe of Pittsfield, Massachusetts, for his present duties as an instructor at the Randolph Field school. Captain Howe went to England during the blitz of 1941 as a volunteer. He remained with the British after the aerial bombings had subsided, and in serving on the "Gold Coast of Africa" learned much about malaria control. Now he is using that practical field experience to teach future Flight Surgeons how to combat malaria. Capt. Howe was transferred to the American Army in 1943, returning to the United States in order to go through the School of Aviation Medicine and officially qualify for his Flight Surgeon's rating.

Such men are representative of the understanding and ingenious medical experts who watch over the well-being of America's air personnel, fighting the dangers of disease and injury, and the almost equally destructive mental strains of combat.

One strange antidote for air raid jitters, inaugurated by a Flight Surgeon in New Guinea, is worth recounting. The old klaxon sounded an air raid alarm. Soldiers scurried to their shelters as bombs began to rain down on the field. Suddenly through bedlam came the strains of "Clair de Lune," followed by a vocal selection by Richard Tauber. The all clear was finally sounded to the tune of "Blue Danube" with Leopold Stokowski conducting.

Major Albert A. Carp of Philadelphia, Flight Surgeon with the heavy bomber outfit, had prescribed the phonographic concerts. "Take one with every raid," he said "It's good for the nerves."

Once these mask-shrouded officers were civilian doctors — here they train at Randolph Field.



Desert Depot

"They set up a working organization to rebuild battle-shot Liberators — have saved taxpayers $5,000,000."

Dmitri Kodachrome

By Fred B. Barton

BOMBING planes will take just so much punishment, then go to the boneyard or repair-shop. You could scrap them where they drop. Or you can set up a desert repair-shop and overhaul planes stricken in battle.

That's what the U.S. Army has done over at Camp D on the edge of the African desert. D started in business in December 1942. During all of 1943 it was important in putting America's fighting planes back into the fight. It is still important, though as the war continues moving on toward the enemy its working parts will probably be put on rollers and moved closer to the fighting fronts.

An army is always improvising. The gang that got together at Camp D was typical American Army. A few were professional full-time soldiers — maybe 1/100th of one per cent. A few were trained airplane mechanics — perhaps two per cent. The rest were just average every-day Americans — salesmen, insurance men, college lads, business men of one kind or another.

They set up a working organization to rebuild battle-shot planes and put them back into the fight. They began with men who for the most part knew very little about working with tools, and often lacked some of the materials and equipment considered essential.

But they produced results. The workers at D shortened the war in North Africa and helped chase the Italians and Nazis out of Africa. They have put out over 1,000 planes, representing 21 different types, from B-24's down to small liaison or scout craft. They have serviced 170 big bombing B-24's, including 37 major overhauls. They figure they have saved the taxpayers of America $5,000,000 or more. That's a lot of war bonds.

D is just a spot in the flat sand, not far from the bright blue edge of the Red Sea. Now you don't land an airplane just anywhere in the desert and take off on the flat sand. You can't. The wind digs its holes, and nature roughens the sand. You need bulldozers to smooth out the sand, and asphalt runways. D has runways now. It has some buildings, with electric lights and wash-bowl-and-pitcher plumbing. It's one of those places where, before our men could start to kill the enemy, they first had to kill, and keep on killing, several million flies.

When I arrived there the brasshats made me welcome. Important as they are — the colonels, the adjutants, the special service officers — I shan't introduce you. This story deals just with the men who actually re-service airplanes, with their own bare hands.

STEP into the low cement office of Captain Carl E. Nystrom of West Boylston, Massachusetts, engineer officer. Sitting across the desk from him at the moment is Master Sergeant Robert M. Price of Detroit, Michigan. Price used to be a reporter and movie man. By the alchemy of Uncle Sam's army he has turned out to be a Grade A personnel man and king mover of Captain Nystrom's workshops.

"At first we had no spare parts to work with," says Captain Nystrom. "Sparkplugs we needed, the worst way. Thousands of them had been discarded, eaten into by sand. Every airplane in the world was using them like paper-napkins at a picnic and then throwing them away and yelling for new. They couldn't do much else. A defective sparkplug means a heavy engine and a plane that won't fly.

"So we picked a lot of discarded sparkplugs out of the desert and started to overhaul them. Eventually we overhauled 160,000 of them. But the job wasn't done with mirrors."

Sergeant Price spoke up. "Staff Sergeant Clarence M. Cash of Indianapolis solved most of the headaches of that department," he said with enthusiasm. "He used to be a sparkplug man back home. Cash had to use his American ingenuity. He made his test equipment from materials he had on hand. There were scrap-parts from salvaged planes. Now and then somebody could find a discarded Eytie motor or something. Out of odds and ends he made a gap-tester that didn't look amateurish, and it did the job.

"Some repair shops pride themselves on turning out three to six conditioned spark-plugs per man-hour. We turned out 24 per man-hour. We could and did turn out 10,000 a week," says Price.

Staff Sergeant Clifford J. Shreve of El Paso was another of these workshop heroes who tackled a mystery and brought forth the clue that solved the puzzle. A lot of B-24s and B-25s came in with damaged turrets. These turrets had to be repaired or replaced. Before being put back on the bomber they had to be tested, to see if they would revolve properly and respond to the controls.

So Shreve, who is the son of an Army colonel, designed a test-stand on which they could place the top — or nose — or tail-turret and try it out. That saved a lot of time. Saved men's lives, too.

Tech. Sgt. Lawrence Gebauer of White Bear Lake, Minnesota, met another stiff challenge. He and his men built a balancing stand on which you place a propeller and get the blades at exactly the proper pitch. If the prop is out of balance, you understand, it will tear itself to pieces in the air. Got to be absolutely exact.

What's more, they had to turn out props in a hurry. To remove a damaged prop and put a new one back on used to take half a day. Recently Gebauer's gang were handed a plane that wanted to get back in the air within an hour. Could they do it? They unpacked a new prop from the crate, assembled it, tested it, and slid it in place. The plane took off 45 minutes after they got the job. Neat, eh?

Master Sergeant Wm. O. James of Centerville, Mississippi, meanwhile had some problems too. As head of the sheet metal department he started with a nucleus of men who didn't know much about airplanes but were eager to keep their flying brothers equipped with planes that would fly.

At first they didn't have much to work with. They had to re-build airplane bodies with nothing but flat sheets of metal for material, and sometimes even metal that had been salvaged from a hangar queen. They whittled and filed and hammered. They even cut their own jigs. But plane after plane got back into the air with its nose and belly all rebuilt, thanks to their tinshop technique.

Nowadays they don't have to rebuild the belly of a B-24 from scratch. The factory helps out there. The whole front belly section arrives from home now complete, ready to be slipped into place and fastened there. Nose-wheel door is ready; the whole vital front and underside of the plane, so often riddled by bullets, so often smashed flat by a crash landing, can be renewed in a few days. They're grateful to the factories back home for this help. But if the day's dog-fighting shoots up more planes than there are replacements for, they still know how to roll their own, so to speak.

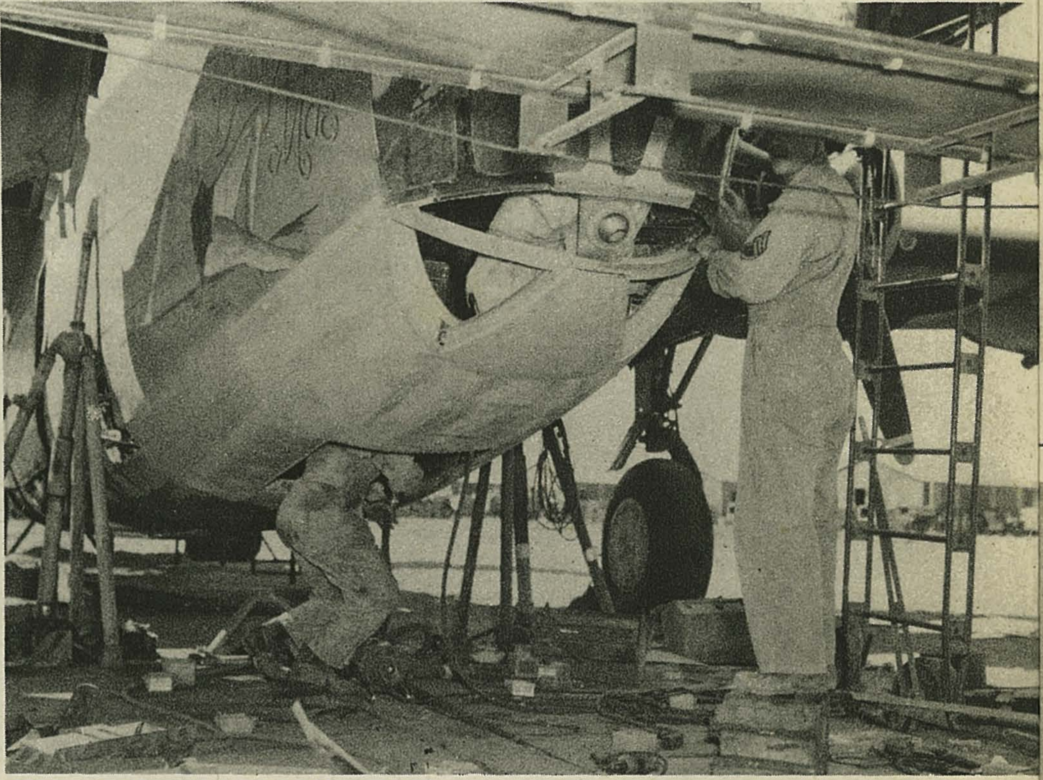
These lads have reclaimed 60,000 separate items that started out as junk — shipped back from the fighting fronts at Bengasi and elsewhere in junkyard condition.

They have put out 28,000 accessories. They have reconditioned over 3,000 propellers, 3,900 parachutes, over 5,000 armor and turret accessories — from complete turret down to a part.

They rebuilt over 4,000 fuel cells and accessories — and because these fuel cells are of rubber and are hard to replace, that alone has saved the taxpayers a fortune. They rebuilt 708 superchargers — and those babies cost over $3,000 apiece.

Along with that they have shipped out over 5 million pounds of fighting freight by air to our various tactical units. This includes over 1,200 airplane engines, either new or serviceable, up to the front.

Remember when a Ju-88 was flown back to the States, to show our people back home what a Nazi fighting plane looks like? These men handled that little job. It was a problem then to search the plane for possible booby-traps. This plane was full of them. Not just booby-traps, because the plane was never intended to fall into unfriendly hands without being blown to pieces. But it had plenty of things that went boom when some unwary person touched a button.



Liberator being rebuilt after Ploesti. Today, complete new sections are shipped from the U.S.

They managed to discover and un-wire the explosive bomb that was meant to blow the tail section to bits, making the plane unfit to fly if it should be captured. But they didn't discover — in time — another possible death-trap. Somebody touched a button, and an explosive charge inside the right wing went off. It was designed to cut loose the extra fuel tanks when empty. The explosion singed the eyebrows of one of the workmen, but fortunately did no further damage. The Ju-88 was fixed up and flown home.

After the Ploesti raid, which shattered the Nazi's oil supply and quickened victory for the Russians, some B-24s landed in Cyprus, unable to make the long jump across water back to their home bases in Egypt. So this outfit loaded some men in planes and flew them to Cyprus. In two days they had all but two of the planes back in the air again.

In Sicily a bomber landed one day in a melon patch. There was simply no way to fly it out. But this gang sent over an overhaul crew. In 10 days' time they changed two engines, did necessary body work, and rebuilt the wings in which natives of Sicily (thinking the plane was fair prey for salvagers) had cut holes and drained out the gasoline. Then this gang made a temporary runway right through the melon patch, and flew the plane back home.

From D the first contingent of American mechanics went to Malta and operated there from February to November 1943. Malta was overnight host to a lot of B-24s that took off from Bengasi to bomb Italy and in some cases couldn't fly back.

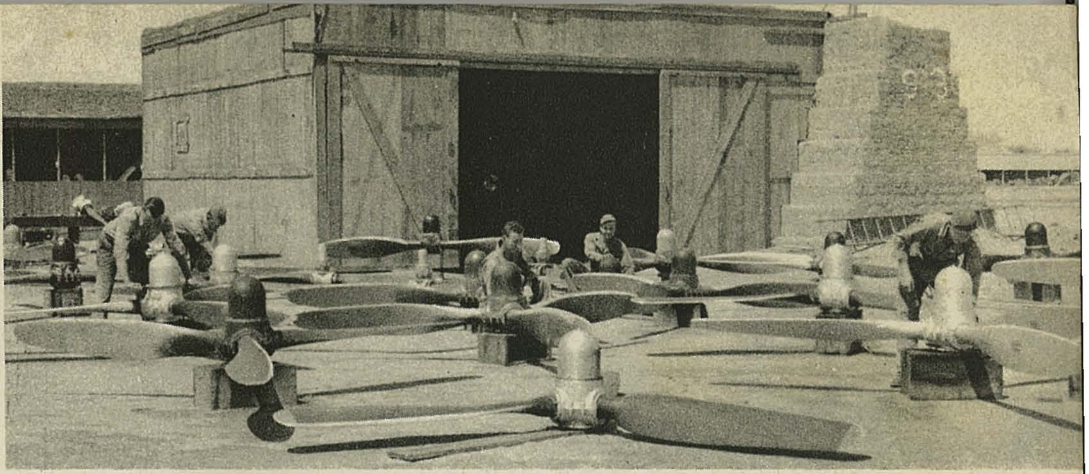
So this desert air depot has serviced planes from Sicily, from Aden in the south of Saudi Arabia, from Tripoli, and other places. Even with North Africa out of the active fight, they are still kept busy servicing supply planes. Considerable ATC (Air Transport Command) flying goes through this area. A lot of stuff has gone through here, too, on its way to Russia. That includes hundreds of complete new airplanes.

No flyer flies very long without the daily help and thorough carefulness of such grease-monkeys.

The War Department doesn't award medals for doing humdrum jobs, no matter how vital, behind the lines. You only get a medal for going into battle and encountering the enemy.

So in this highly mechanized war, where (as someone figured) there are 18 men in the rear for every man actually fighting, a lot of such brave men and true are going into their second and even third year of the war without ever being able to write home "Mother dear, I am now a hero."

It is therefore pleasing to chronicle the awarding of a soldier's medal to two GI's who might, except for a freak, never have come to the public attention.


In this shop in the desert, built from airplane crates, propellers are balanced with accuracy.

Corporal William J. Brothers of Memphis and Private Mark B. Leeser of Chicago are two enlisted men who work as radio operator and engineer on B-24s and other battlecraft "somewhere in the Middle East."

They represent the "crew" on one-way trips bringing battle-shattered planes back to the desert air depot for overhauling. Of necessity many planes they fly are held together with sticky tape and bailing-wire, so to speak.

It was on the night of December 21, 1943, that they picked up a B-24 over on the desert near Bengasi. For six months that plane hadn't been off the ground, and nothing had been done to it. A ground crew then had given the plane a brief overhaul, and then two lieutenants and Brothers and Leeser took charge of the ship for the run of two or three hours back to the air depot. Their job was to watch the instruments and if anything went wrong to fix it.

"We were flying along about 2,000 feet altitude," said Brothers, "and it was about 10 o'clock. A heavy electrical storm was going on. The radio went out. It was cold, and we had the flight deck closed in.

"Then, all of a sudden, I saw fire. It was an electrical fire, resulting from a stuck solenoid: too much juice going through and melting the contacts. It was our battery solenoid.

"I could see the fire through the navigator's dome and through the rudder-pedal cracks and around the radio panel. The flames lit up the whole inside of the cockpit. Smoke was coming up too.

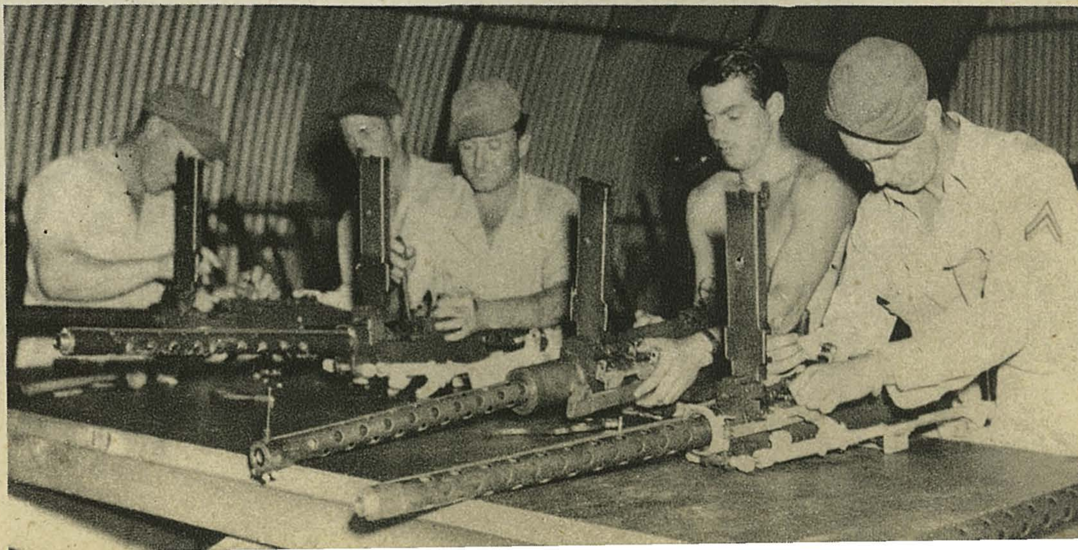
"I yelled 'Fire' and started moving. Leeser had seen the flames almost as quickly as I had. We got the flight deck doors open. I went back to arrange the parachutes in case we had to leave the plane, then grabbed the fire extinguisher and came forward. Leeser meanwhile had grabbed the five-gallon water container and had doused the flames. He was quicker than I was: he put the fire out.

"Then I went up and turned off the battery switches. During the rest of that trip we just sweat it out, flying along without half our electrical controls."

The Army Air Force awarded them each a soldier's medal for that. If the flames had got back into the bomb-bay where the gasoline fumes were, it would have blown up the ship. So they handed Brothers and Leeser the handsome soldier's medal: blue on both ends, with red-and-white stripes in the middle.

In the dark of that night and the bad weather of December the plane made a rough landing. Fixing the plane was a three-day job. They changed one engine, replaced two propellers, and then flew the plane back to the air depot for a thorough check-up. It is back in combat flying now.

Cleaning and overhauling Liberator machine guns in primitive machine shop in N. African desert.



Our "Sunday Planes"

They have earned great honor in grilling coastal patrol work for the CAP

By Capt. Art Keil, CAP Intelligence Officer
Civil Air Patrol, Coastal Patrol No. 3

"Before Pearl Harbor they were strictly Sunday Ships — now they were in the scrap seven days a week, carrying loads way beyond their rated capacity."

THE subs are no more of a coastal patrol problem now, but while they lasted they taught us a lot about airplanes.

We were standing beside a Navy runway in North Carolina, when I suddenly got the perspective on the whole business.

There wasn't much wind that day and the Navy fighter overshot. As he eased off his flaps and gunned a couple of thousand horses, the ground actually trembled and the roar was deafening. My eyes popped as he picked up incredible speed and vanished over the trees before the sound stopped.

"I don't believe it," I said.

The Major grinned. "That's the hottest thing in the air today. You're seeing something just off the test line. Finest piece of airplane engineering in the country. As soon as these kids get used to it, they'll take it into its first action. Right now it's a military secret."

At the other end of the two mile runway the Navy came in for a perfect landing. Right behind him, dawdling along, was the ship we had been waiting for, one of the Major's Civil Air Patrol ships, coming off Coast Patrol.

We saw the bright yellow of his wings as he banked for the runway. On a level with the windows of the control tower, he waggled as he went by, gave the impression of stopping to chat with the tower man. He was half way down the runway before he throttled back for his glide, landed a little short and had to rev. up a few notches to make the outer taxi strip at our end of the runway. Obviously the fighter runway was a little overbuilt for a Stinson Voyager, even with a heavy load.

"Now, there *is* an airplane!" The Major was so full of pride he might have been talking about an only son with the Medal of Honor. "It may be only a pup, but it's sure doing a man-sized job."

That's when I saw the whole picture in perspective. There, in the little 90 horsepower personal plane, was as much an engineering story as in all the hot fighters and superdooper bombers in this war. These Voyagers weren't designed for the battle of the Atlantic at all. But they were certainly fighting it.

Before Pearl Harbor they were strictly Sunday Ships.

They were built for a couple of hundred hours a year, flying in fair weather, to be babied, waxed and polished.

Now they were in the thick of the scrap seven days a week, stopping only for checks and overhauls, working in all kinds of dirty weather, carrying a load 'way beyond their rated capacity, sucking up salt laden sea air, piling up more hours in a month than they

"These Voyagers weren't designed for the Battle of the Atlantic at all. But they were certainly fighting it, and in all kinds of dirty weather."

used to fly in a year. They drew a different pilot every day, and different set of mechanics for checks and overhauls.

The new, hot warplanes, by comparison, were constructed to tough military specifications. When the engineers needed strength they added it, when they needed more power, they added it; when the metal wasn't tough enough, they just got Joe to invent a new metal.

But these same engineers, a few years ago, did a greater job when they designed these Sunday Planes. For these little planes are ten times better than they were ever supposed to be. They have proved it by a record of 24 million miles of overwater flight.

THEY are so sound, in basic engineering, quality and margin of safety, that they took the overloading and daily beating in stride. Despite the hazards of ocean flying in land planes, there were only 26 fatalities in the entire history of CAP Coastal Patrol — about one for every million miles flown.

There were only 90 planes lost or damaged beyond repair. And if the experience at our base is any criterion, most of the losses were due to "dunkings," which would have been just ordinary forced landings on a land operation.

At Coastal Patrol No. 3, we lost two ships in 18,712 hours of flight, did not injure a man. Both of these were "dunking" losses, would have been saved over fair terrain. Capt. Ted Keys brought his ship in from 10 miles offshore only to find a beach studded with posts as he ran out of altitude. He put down about 400 feet offshore in the surf. When the ship was recovered it was found that the longeron carrying the 100-pound bomb (which he had forgotten to drop) wasn't even bent.

In the other instance, Lt. Wiley Reynolds, Jr., was still getting about 1,900 revs. with a stuck valve, when he gradually lost altitude too far off-shore to make the beach. Over land, his chances for a pasture would have been excellent.

There were only three other forced landings from our base in nearly a year and a half. One ship was flown to an airport from eight miles off-shore, one landed on the beach and one on a road; none was damaged in landing. That doesn't include off-schedule landings due to weather. Several of the men were forced down on roads, beaches or fields, trying to fly when the ducks were walking. But, in all, this base lost only three days of flying in 17 months. We kept saying the law of averages was against us. But the ships kept going.

Ours was the third base to be activated

in the country, and one of the few to be entirely equipped with locally-owned personal planes. We have been flying as volunteers in 1st Air Squadron, Florida Defense Force. We went to work on Coastal Patrol three weeks after the service was inaugurated. On the average, during our tour of duty, we used 23 Voyagers, three Lycoming-powered Reliants, and one Wasp Reliant out of the Stinson line. We also had two Fairchild 24s, one Cessna 165 and one Sikorsky S39 duck.

The Voyagers were carrying two men and overloads up to 165 or 175 pounds. Life vests, flashlights, canteens and knives were needed for each man, with one large or two small life rafts, radio transmitter and receiver, and a hundred-pound bomb for standard equipment. The heavier craft carried 325 pound depth charges, with the lower fin cut away to give a couple of inches more ground clearance.

Our service problems were quite typical. A few weeks after we started hunting subs, we moved from Morrison Field near West Palm Beach to a new airport at Latana, a few miles south. Service facilities consisted of eight portable canvas hangars — capacity eight airplanes or one stockroom, one bomb stockroom, and six individual workshops. Later we built a hangar, but for months all checks and overhauls were done in the open, or with the nose of the ship poked in a portable. Open motors were "protected" by tarpaulins, but ships parked on the ramp got full benefit of blowing sand, salty morning dew, driving rain and burning sun. There was little turf and acres of raw sand in every direction.

Parts were not always easy to find after the factories turned to warcraft production and reserve stocks were exhausted. Each engineering officer either made what he needed in many cases, or hunted up an Army or Navy friend for material he could adapt.

During a base-hopping trip up the Atlantic Coast last summer I heard the phrase: "Oh, we've got a friend at the base over there," so often that it seemed a byword with Coastal Patrol commanders. They could always beg an extra hunk of wire when it was really needed. But if any of these personal planes had developed real bugs, even "friends" on the Army and Navy bases couldn't have helped much. The ships were old, as we think of planes in 1944. Unlike combat craft, they couldn't be refined or rebuilt to eliminate trouble.

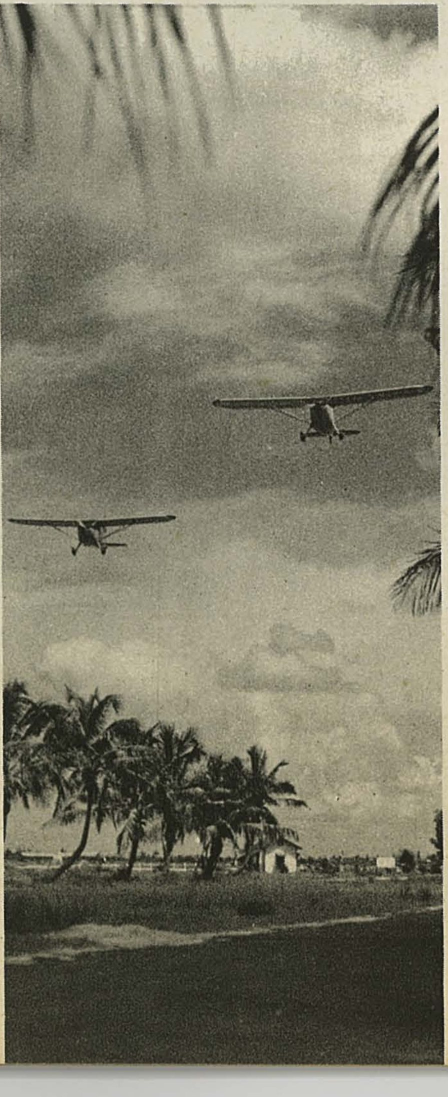
From the start we had to keep 'em rolling. There was no place for a "hangar queen" if we had had a hangar to put her in. Schedules called for 14 missions a day, and when the hunting was good the boys often flew all day. For example, take a "hot" one-day page from the history of Base Three, in our early days when all hell was poppin' before the ships were carrying bombs or depth charges. I give you the official record:

"While continuing the search for survivors from the SS Eclipse, three missions spotted the submarine, about to attack another vessel. They dived on the periscope, drove him under. Other missions were sent out but made no further contact.

"The following morning dawn patrols found the SS DeLisle on the beach with a hole in her side about 25 miles north of the spot. Orders came through to extend the patrol to Daytona Beach, 190 miles north of the base, and planes staying at Melbourne each night made the north run from that port.

"The Melbourne patrol with Pilot Carl Dahlberg and Observer Earl Adams flushed a U-boat off Cape Canaveral at 0630, just at sunrise. The enemy was trailing a tanker, his conning tower awash, when they turned toward him. He crash-dived one and one-half miles away, but 20 minutes later they picked up his slick, on a line between the diving point and the tanker. Meanwhile a Navy plane had answered the radio call for aid and Dahlberg led him to the slick. At 0704 the Navy unloaded depth charges and were later reported, *via* the 'grapevine', to have scored a positive. Col. Reeves, in his commendation, credited the CAP crew with saving the tanker.

Planes taking off for the dawn patrol.



"Farther south, first patrols from the Base found three other victims of the night's raid. The Dutch freighter SS Amazone was down with just the tip of the mast visible and the U.S. tanker SS Java Arrow was floating with a huge hole in her side. Five miles south was the U.S. tanker SS Halsey, loaded with 40,000 barrels of naphtha and high octane gas. She had caught fire some time after being torpedoed, just as the crew was returning in life boats to go aboard. Searches for survivors occupied all missions.

"Late that afternoon, going into Melbourne for the night, Pilot 'Doc' Rinker and Observer Tom Manning flushed a sub off the Cape in such shallow water that the U-boat rammed its prow into the sand bottom as it tried to escape. A few minutes later the conning tower emerged as the sub backed out of the sand. The patrol ship, over him at 400 feet, had nothing to drop on him but a smoke flare. By the time aid arrived the U-boat was out of trouble and into deep water. It was later reported to the Base that Gen. Arnold issued the order to equip all CAP Coastal Patrol ships with bombs when he was shown a report of this mission."

On days like that, our regular four-hour patrol was likely to stretch into eight or ten hours with but one stop for refueling. It was a bit different from the pre-war Sunday hops of an hour or two.

Airplanes that will fly their gas limits day after day, week after week and month after month, as did our Sunday Planes of the CAP, are planes to talk about. When the medals are passed around, strike off a special one for these little planes of ours. They, and the fellows who kept them flying, have done their work "in the highest traditions of American aviation."

By Lieutenant
Horace
Lee Williams
USAAF

(By Mail from Cairo)

BOMBING IS OUR BUSINESS

We keep our hats on while we eat. That's probably the first thing you'd notice if you dropped in at our base over in Italy for breakfast some morning. We wear them because there's no place else to put them.

We live in a swamp of mud that is cold and thick and gooey. You never get used to it. The only time you forget it is when you're up in the air in your bomber.

We get waked out of a sound sleep at maybe 4:30, maybe 5. It's raw and cold. We have a hot cup of coffee and gather in the briefing room. They tell us what target we are to go after — how high to fly — how to get there and back — and how soon to take off. What might amaze you is that everybody seems pretty casual about it.

Here we are, about to fly several hundred miles and bomb hell out of some unsuspecting factory or railroad yard or airport or dock. We climb into our Liberator bombing planes as if we were going to take a ride in a Fifth Avenue bus.

As navigator I've been on more than 30 bombing missions, heading into most of the occupied lands of Europe. It has been an experience I wouldn't take a million dollars for — although frankly you can have your war any time you like it and let me go back home to my farm in Texas.

When you spend 10 to 14 hours in a plane — when your whole present happiness and your chance for future life are tied up in the way that plane handles and flies — you come to trust and to love that plane as if it were something human.

Maybe men who fly other makes of planes come to trust and love their planes too. I hope they do. All I know is that I've done my flying in a Liberator named "Hiawatha."

Sometimes we have an escort of P-38s, and that is the most precious thing in the world. Every bomber pilot would rather have a P-38 alongside him than to have a beautiful blonde.

Not all of our risks are in combat. Sometimes men get killed on our home field.

I remember the day the runway of the field we were using was rough and had patches of water on it. The leading plane speeded up, but hit a bump that threw it into the air before it was ready. The plane became air-borne but lacked enough momentum to keep going. So it nosed down into the earth with a sickening crash.

The plane didn't explode. But the shock smashed up all seven of the crew, all of whom were standing in the radio compartment for the take-off.

It's tough enough when you see friends get killed in combat. But there at least they generally trade life for life. To see good men killed off just in practice missions and take-offs does something to you. It makes you feel bad all over.

We spend very little time, however, thinking about the men who go. You can't afford to let your thoughts become morbid and unhappy. When we return from a mission we slip over to the officers' club, pour ourselves a drink, and start talking about tomorrow's mission — or about the dance we hope to go to next Saturday.

When you face possible death every few days you study to simplify your life. For instance, you may notice I don't wear any finger-rings. No jewelry of any kind: none of these identification bracelets, for instance. Too much danger of that junk catching on something when I get ready to jump — if I ever have to jump.

I'll never forget the day I saw a fellow-American jump feet first from the nose-wheel door in a bombing plane. Something caught then. Maybe somebody else in his plane saw him and was able to help him. But — probably he was still there when the plane crashed to earth, as it did a few minutes later.

I don't want anything holding me back. There are enough things hanging around me as it is — my 30-pound flak-suit to ward off stray pieces of flak, my parachute harness, my battle-jacket, my flying boots.

Sitting here in the quiet courtyard at Shepheard's Hotel in Cairo it is hard for me to tell you what combat flying is like. Life is too comfortable here.

I'm no hero with a story to tell. I haven't shot down any enemy planes. (As navigator I'm not supposed to, but I've tried.) After all, my combat flying has been safe and uneventful.

I've met a lot of mighty good fellows. Men born to fly, you might say. Americans are the best flyers in the world. They take life easy, they have confidence in the planes they fly, they have confidence in themselves.

Take Italians, now. You can spot an Italian pilot as far away as you can see. He does everything by the book. And he likes to show off. (He generally does the showing-off at a safe distance.) Jerry, on the other hand, is a pretty good flyer, and when he starts coming he *keeps* coming.

But Americans top them all. To most Americans flying now in Italy, it's just a job.

We get what fun we can out of it. For instance, I'm taking some canned goods and food and three Primus stoves back to camp with me now, so we can have extra food in our camp. Not much there to spend money on — not much that clean American boys want, if you get what I mean.

We get fun, and we try to be matter-of-fact about the work. Uncle Sam hired us to bomb the guts out of the enemy. No use letting it get us down. We're doing it. Bombing is our business.

Ai

Henry Dreyfuss has designed these fi
appointments for one of Consolidat
Vultee's post-war airliners, Model 3

PASSENGER comfort and convenience are prime considerations for manufacturers and designers working today on the airplane of the future. Safety is now practically taken for granted, as a result of the enormous advances in engineering. Luxurious comfort is the new problem, and the industrial designer is already at work on it.

New seating and sleeping arrangements, greater space for passengers and baggage, original fittings of plastics and other novel materials — these and dozens of other improvements are being created for the spacious planes people will discover post-war.

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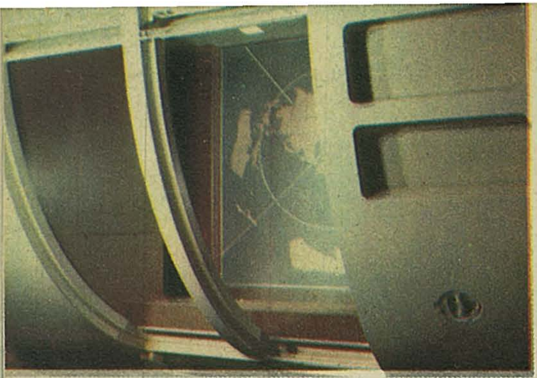
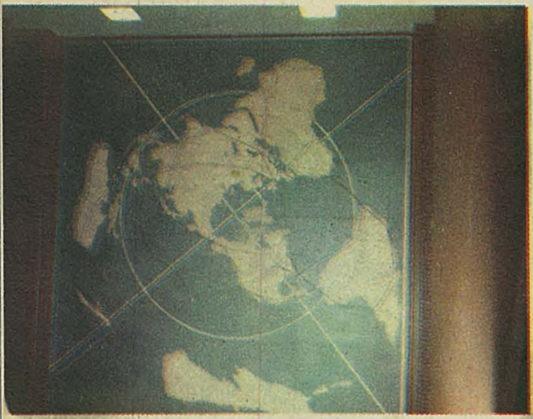
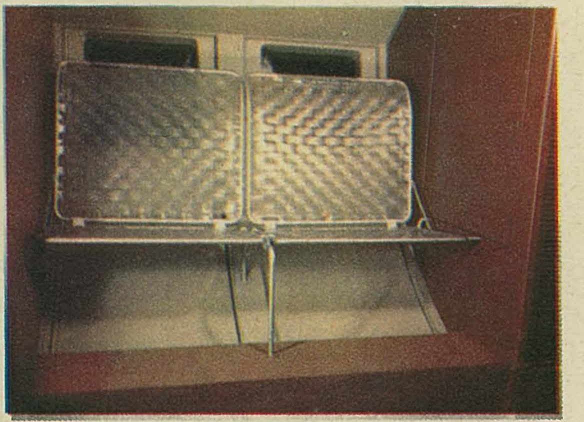


You enter here midships in the belly.

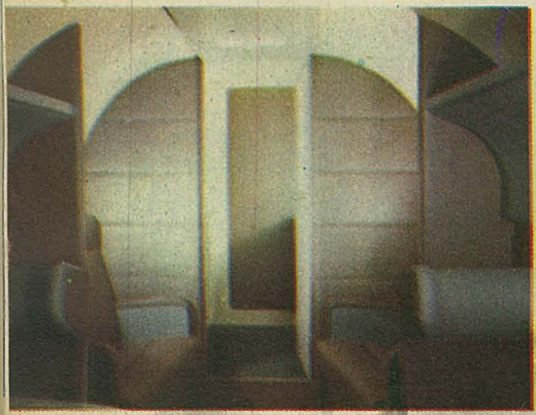
The doors slide shut behind you like an elevator's.



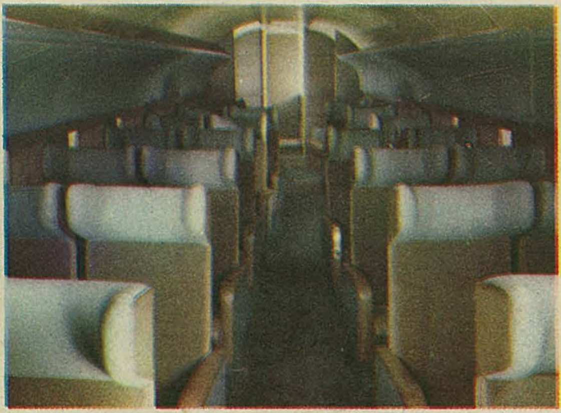
Ahead, a map shows you the air-route.



How space is used: a lounge seat fills the doorway.



Aft is the serving pantry and a lounge.



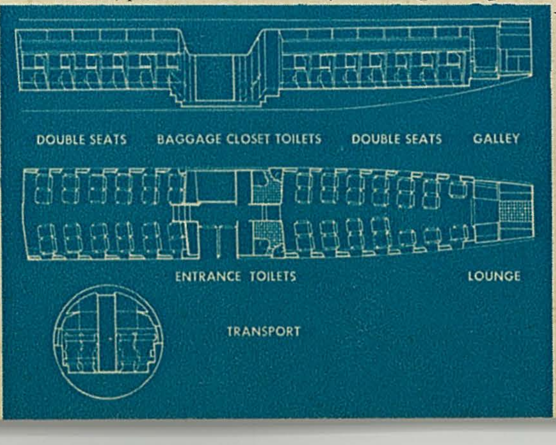
View aft showing seats placed in pairs, coach-style.

Each seat has its individual reading light.

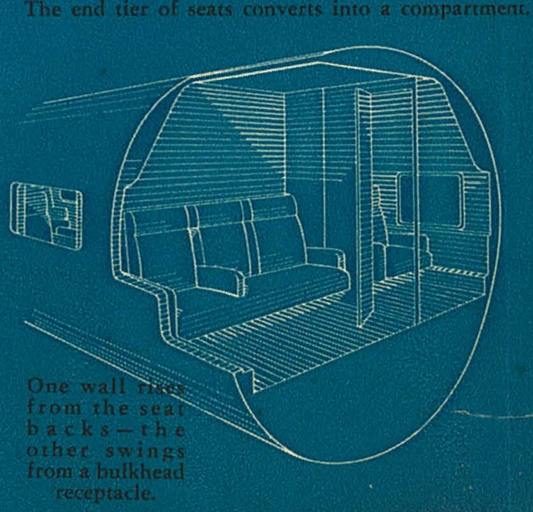
Each reclines comfortably, has its own pillow-radio.

Below, entrance to mirrored lavatory.

Below, plans for the coach-style seating arrangement.



The end tier of seats converts into a compartment.



One wall rises from the seat backs — the other swings from a bulkhead receptacle.

ir Luxury For Tomorrow

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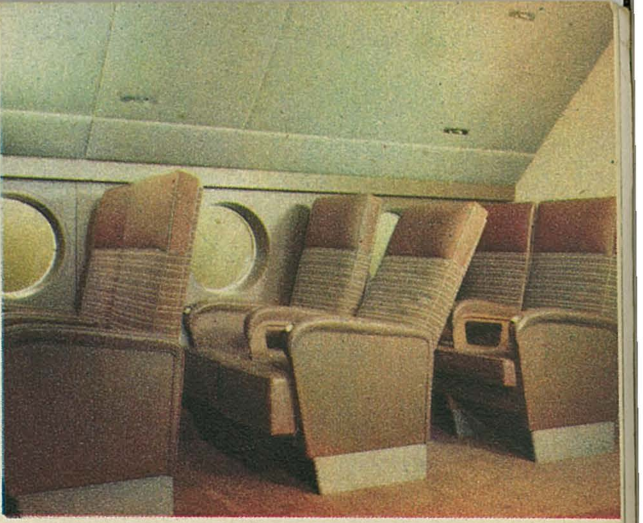
olidated
odel 39

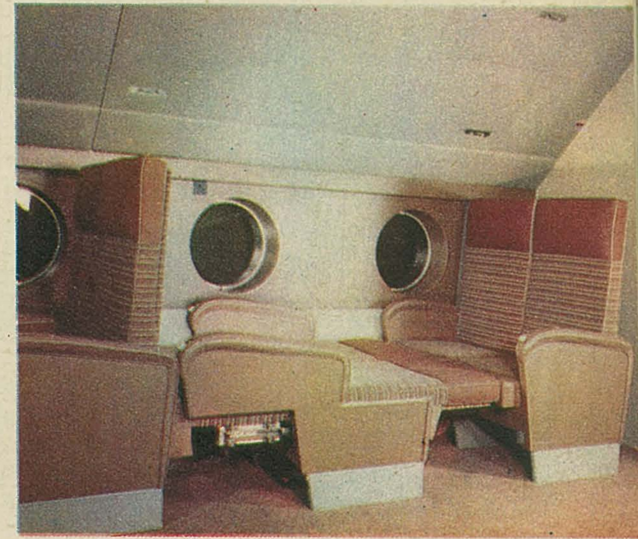
Henry Dreyfuss of New York, distinguished industrial designer and consultant to Consolidated Vultee Aircraft Corporation, has built a full-sized "mock-up" to show some of these coming innovations. Although the fittings are specially designed for the Corporation's first post-war airliner, Company Model 39, which is to be test-flown this spring, they illustrate details which can readily be incorporated in planes of widely diverse types.

The Dreyfuss designs shown in the accompanying illustrations provide not for one plane interior, but for four alternate possibilities, and also for combinations of the four. First is a conventional coach plan, with a center aisle flanked by pairs of easy chairs. (See left column pictures.)

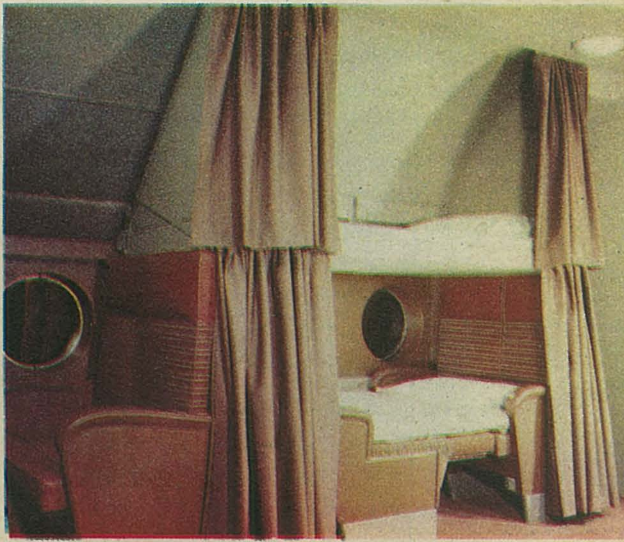
Second is a plan for breaking up such a conventional arrangement, to provide a feeling of much greater spaciousness. Here, as will be noted in the center illustration, seats are placed back to back, in groups of three and one; the groups are then alternated to eliminate the straight aisle. An effect of intimate privacy results, together with an impression of far more room for passengers. Actually, the seating capacity



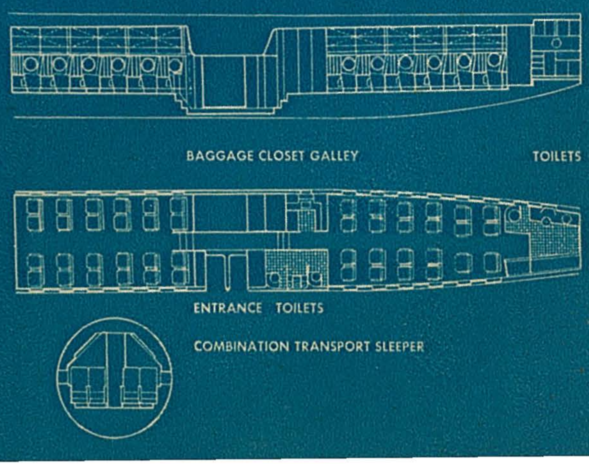
These lounge chairs will convert into berths.



Two pairs of chairs make a bed 75" long.



The upper berth swings from the ceiling.
Below are plans for the transport-sleeper.



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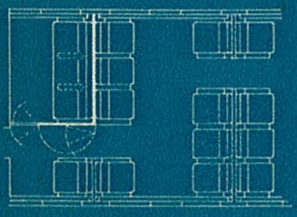
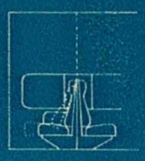
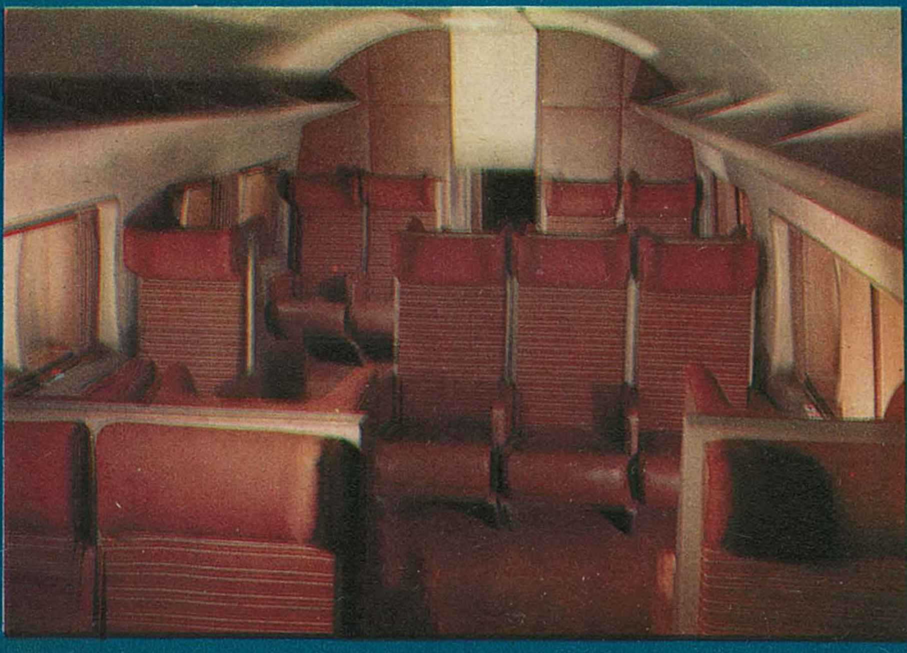


Here is a back-to-back seating arrangement that gives an effect of great privacy and spaciousness, by eliminating the conventional center aisle familiar in prevailing coach plans.





of the plane is reduced through this plan by only four seats out of 48.

This back-to-back arrangement permits another innovation — a scheme for converting the end tier of seats into a completely private compartment. Often business men must work as they travel — or a traveling invalid may need isolation. Mr. Dreyfuss, as the center plan shows, has created an ingenious scheme for pulling one partition out of the back of three adjoining seats, and for swinging a second partition out of a wall pocket, to create a completely enclosed compartment section at the forward end of the plane.

The third scheme created by Mr. Dreyfuss is the most novel of all. It provides for chairs — arranged in pairs on either side of an aisle — that convert into beds. This plan creates a plane interior which, after use for daytime transport, is convertible for a return night trip into a sleeper with upper and lower berths. The comfortable individual chairs which permit such a conversion are of modernized design, completely different from any accommodations familiar on our present Pullman cars. (See the right-hand column on page 17.)

The fourth plan Mr. Dreyfuss has created is a more conventional and Pullmanesque arrangement for the long-distance traveler. As shown on page 19, the seats are much like those familiar on the railroad Pullman, and make up into berths in much the same way, though allowing more room and passenger comfort.

In the particular plane design used as a basis for his mock-up, Mr. Dreyfuss has divided the cabin into two parts — a division permitted by the high wing design.

The passengers' entrance is situated in the exact center of the plane. Two sliding doors built into the hull slide open like those of an elevator. Upon entering, the passenger is in a small lobby, faced with an air-map of the route ahead of him. Even in this entrance lobby Mr. Dreyfuss shows his genius for use of space. When the entrance doors are closed, two seats of plastic webbing fold down from a recessed panel and fit into the doorway area. They may be used either as extra passenger or lounge seats.

For the convenience of passengers boarding and leaving the plane, recessed coat closets are built at each side of the entrance; and back of the map is a luggage compartment. Additional storage space is located in the extreme end of the tail, together with a small lounge and a galley for serving meals.

The toilet facilities offer convenience unknown on pre-war planes. The woman's powder room, for instance, has a whole wall covered with plastic mirror.

THE seats for the day transport shown on page 16 are unusual. Their design is derived from the wing chair familiar in family living rooms. An individual reading light is built into the left wing, so spotted that it falls directly on the lap. The other wing houses a "pillow radio," which permits the passenger to hear programs without annoying his companion.

Space is provided for the passenger's small baggage, such as an overnight case, beneath each seat. Overhead, the baggage rack doubles as a hand rail. Thus a passenger has immediate access to his small personal effects without visiting the luggage room.

Seat upholstering conforms to the body's contours. When the passenger presses a button, the back reclines and the seat slips forward, dropping slightly at the rear to offer a more comfortable lounging position.

For his day transport, Mr. Dreyfuss suggests large windows, with sliding shutters of translucent plastic.

The two seating arrangements which are designed for converting into sleeper berths at night use seats somewhat different in character.

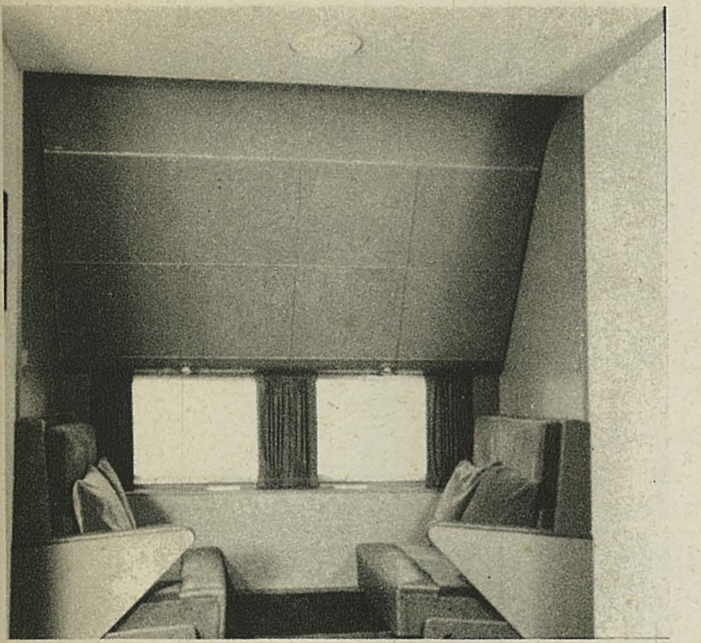
In the novel plan for using convertible chairs, shown on page 17, the chair is designed without wings, in interest of convertibility. These chairs operate in series of four to make a lower berth, with an upper berth over it. The result is that a 48-passenger day plane may be converted to a 24-passenger sleeper transport, while the plane is in full flight.

Using standard seating arrangement, wherein all passengers face forward, a 36-inch by 75-inch berth is effected with two pairs of chairs. Backs of the first two straighten to stand perpendicular to the floor, making a wall; backs of the next pair lie down as the seats slide forward; and — repeating — the backs of the next pair of seats operate just as the backs of the first, creating a wall to isolate the adjoining berth.

Above, the mirrored retiring room; the mirror is not glass, but plastic. Right, top, an alternate seating arrangement for sleeper planes that provides Pullman like divans. Right, bottom, the divans made into berths.

When the panel housing the upper berth is opened, two upper end-closures extend the side walls to the ceiling, to form a solid compartment. Lightweight bedding materials and lightproof curtains are stored in the upper berth when not in use.

A modern idea in visual comfort is used by Mr. Dreyfuss for such sleeping sections, in the form of Polaroid windows that allow a passenger to select variable densities of light, from bright sunlight to complete darkness.



In his interior designed to show a sleeper plane fitted more conventionally like today's Pullmans, Mr. Dreyfuss offers the sofa seats pictured on page 19. Designed in a style familiar to present-day railroad travelers, they are wider and broader than Pullman seats, are equipped with lounge pillows, and are correspondingly comfortable. Tall men will be happy to learn that six and a half feet of bed length are provided by this "Pullman" design. The passenger in the lower berth sleeps approximately 17 inches off the floor. The passenger in the upper berth has his own window built into the fuselage.

The berths on both sleeper designs are entirely self-contained, and each can be made up in less than five minutes' time.

These new designs provide space more efficient and more flexible, in meeting the changing demands during year-round operation over long routes, than any yet devised. All of the four seating arrangements, for instance, can be used in combination with each other. If passenger requirements over the route on which the ship operates are such that both back-to-back and conventional seating are wanted, both types can be installed. Similarly, one section of the ship can be furnished for day or "coach" passengers, while another section can be fitted for sleeper passengers.

To select his fittings for the interiors, Mr. Dreyfuss made a survey of suitable lightweight products of manufacturers all over America. A room was set apart for assembling samples of textiles, plastics, lightweight metals, and all mechanical innovations of possible aid to the traveler.

Colors were given special study. It is interesting to observe that Mr. Dreyfuss seeks to surround his plane passengers with earthy colors. Soft browns dominate. He feels these give the air traveler a greater sense of psychological security. In the role of artist as well as a designer, he puts great stress on the need of assuring the passenger psychological comfort (which is usually an unconscious reaction) as well as the more obvious physical conveniences which passengers appreciate.

The need for weight economy is a carefully calculated factor in every part of his design work. Some airlines believe that an extra pound in plane weight costs $50 a year in lost revenue. Hence resin-bonded paper, plastics, thin wood veneers that are bonded to paper or aluminum, are used to save all-important poundage.

Upholstering is of special weaves. Loosely-woven strong cloth is used to provide sound-absorption. Lightweight leather is used to finish the plane's main bulkheads, both to add a luxurious feel and to provide maintenance ease. Floors are covered by lightweight carpeting.

Colors, as already noted, are chosen to make dark tones to dominant. Warm gray and rust brown are used in one interior scheme. Wood brown and soft green are combined in another.

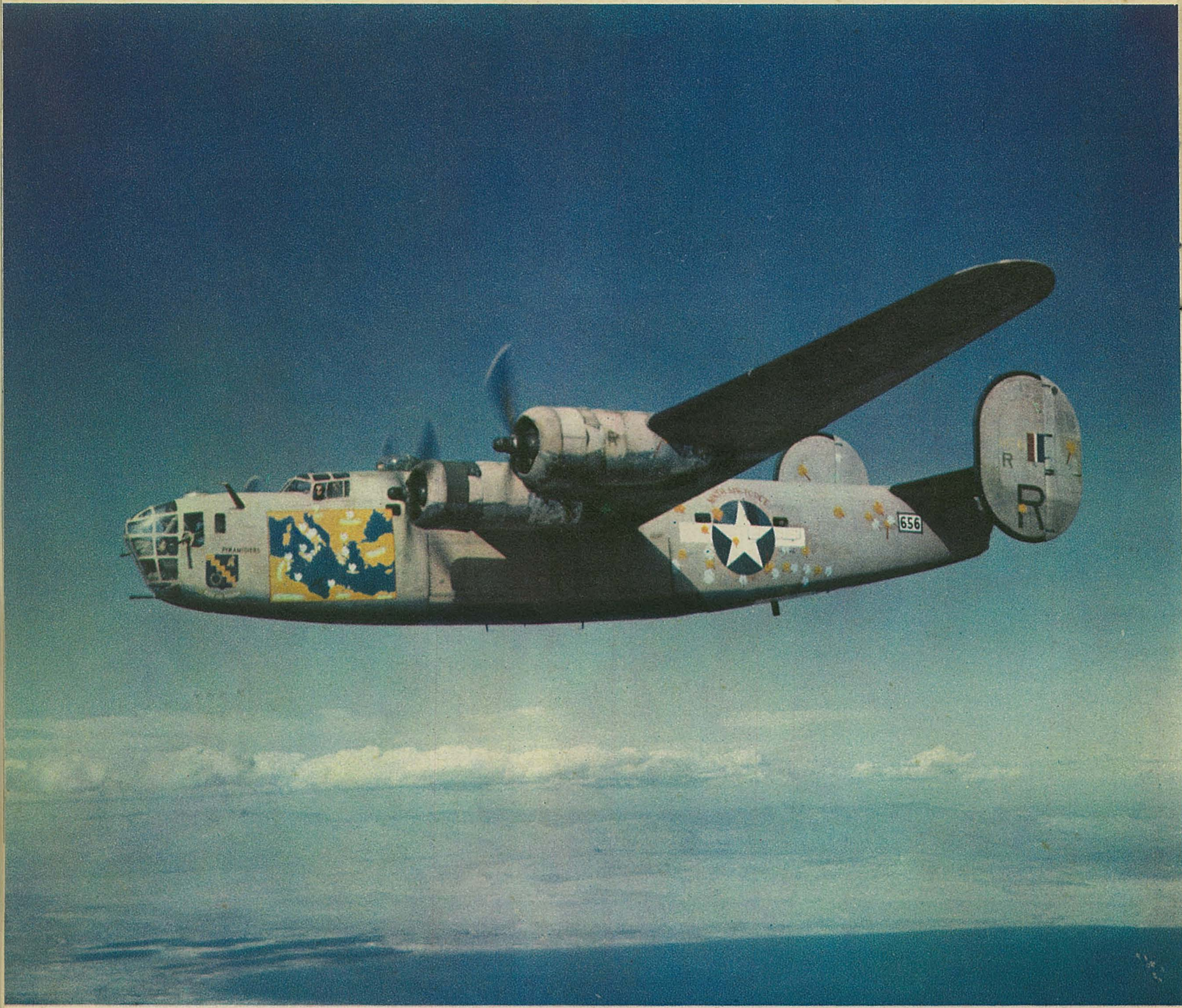
Many details of the Dreyfuss fittings, unimportant in themselves, show the care and imagination expended on his designs. Thus soap is provided for the washrooms in the form of soap-impregnated paper, instead of heavier bars. In the seating scheme of the coach, for instance, the seats are canted at an angle of five degrees of a right angle to the line of flight; the effect is to move the seat on the aisle slightly forward, so that the passenger there is given more visibility and a feeling of more privacy.

All of the Dreyfuss work in interior plane designs, it need hardly be emphasized, is in the nature of creative thinking for a future not yet here. Consolidated Vultee is straining every present capacity to produce the planes our fighting men need today; Model 39, for which these designs have been specially created, will not be put into commercial production until the war ends.

I. M. Laddon, executive vice president of Consolidated Vultee who is known internationally for his famous Liberator design, emphasizes that Model 39 is not the biggest plane being created by the Corporation's engineers; but it does illustrate in size, load capacity and speed the type of plane that many believe will be most practical during the initial stages of the postwar development of air-routes. With a top speed of 270 mph, and a maximum range at 200 mph of more than 4,000 miles, it will fly 48 to 52 passengers and baggage non-stop over the longest trade-route ocean crossing. According to Frank Learman, vice president and general sales manager of the company, a plane of this capacity should be no less in demand for domestic service than for trans-ocean crossings.

Model 39 incorporates the highly successful Davis Wing, power plant and landing gear of the Liberator bomber — features which have helped make the Liberator the greatest long distance heavy bomber America has put in the war theatres to date.

The first 39 will probably have been test-flown before this reaches the reader.



Hero's Return. *Here is a returned hero, gallant in parade dress—the Liberator called The Squaw, which flew on more than 70 missions over Hitler's Empire, dropped 360,000 pounds of bombs on his war machine.*

The Squaw first flew to battle in 1942 from Lakeland, Florida, manned by a crew under Major Joe M. Kilgore of Mission, Texas. After 30 missions the Major came home wearing the Silver Star and with his whole crew safe, some decorated with Purple Hearts. The Squaw stayed on in battle for awhile, was then brought home for a tour of the production fronts under another gallant and bemedalled crew piloted by Captain Royden Lebrecht of Denison, Texas.

Today The Squaw wears so many patches and repairs that only a portion of the original plane is left. Her new coat of gleaming paint is splotched to show where wounds are concealed, a great map has been applied to show her missions, and Lebrecht's crew have posted on her the name of their team, the Pyramidiers.

Over the routes The Squaw travelled now stream great squadrons of newer Liberators, in air missions that have as their first goal the destruction of Nazi fighter plane strength and production, and second, the destruction of Germany's key war-making industries.

Counselling the Woman *War-Worker*

By Mary Shipman Jackson
Counselling Director
For Consolidated Vultee Aircraft

SYSTEMATIC training of women as industrial counselors, undertaken by the San Diego Division of Consolidated Vultee Aircraft Corporation, has met with such success that the training courses are now being extended to the majority of its airplane factories throughout the Country.

The counselling program is based on the conviction that the woman employe needs a friendly listener of her own sex with whom she may discuss her problems in absolute confidence, and from whom she may obtain intelligent, impersonal advice. The woman counselor offers guidance not only on work problems, but also on personal matters related to job and adjustment in factory life.

Though aviation is the youngest major industry, it leads the country in the number of women employed. Consolidated Vultee is pioneering in a field of human relationships much more intimate than ordinary dealing between worker and employer. Company management and women workers alike have been gratified by the results.

One of the most vexing problems in production has been the high percentage of "terminations" of employment. In one three-months period at the San Diego plant, 8129 employes left their jobs after giving "personal affairs" as the reason. To get at the root of "personal affairs", which in sum total were affecting war production, and to assist in straightening them out so that women might continue in their jobs, has been one of the primary objectives of the woman counselor program. Its effectiveness may be partly measured by "termination" figures for the most recently available three-months period, in which the previous figure of 8129 job terminations due to "personal affairs" had been cut almost 25 percent.

Personal adjustment of the individual to her job was seen as the key to the problem. The vast majority of the women were engaged in unfamiliar work. Many were on their first jobs. Nearly a third were married women with children. Several thousand had husbands in the armed forces. Some were grandmothers. Others had only recently left high school. The complexities of putting in a 14-hour day at the combined job of building airplanes and maintaining a home were too bewildering and fatiguing for many. So they "terminated".

The solution called for new techniques, based upon a new attitude. An organized system of counselling by properly trained women was needed. It must be standardized but not rigid, it must follow carefully outlined procedures, yet be adaptable to personal circumstance. Above all, it must win the acceptance of the workers and to do this, must have a basis of complete mutual confidence.

TWO cardinal principles underlie the work of the counselling program. First, women counselors are never disciplinarians. They are advisors and consultants to foremen and employes alike, on problems that the foreman feels the counselors can best handle, and on problems the worker prefers to discuss with them. They do not usurp the functions of departmental management by any attempt to provide discipline, or to enforce observance of company rules. Second, their relations with women workers are strictly and completely confidential. Information of a personal type offered by a woman worker is not passed on even to her foreman without her consent.

Universal adherence to the letter and spirit of these principles has been largely responsible for the effectiveness of the woman counselor program.

Once it was established that the function of the counselor is to assist in adjustment to the job, but not in direction of it, the selection and training of a corps of counselors with the proper qualifications was viewed as a major managerial task, requiring months of study, planning and laying out a systematic method of operation.

It seemed from the outset that the right kind of counseling talent ought to be found somewhere among the 40,000 women who already were employed by Consolidated Vultee. Women somewhat familiar with some phase of industrial work and already identified with the Company had obvious initial advantages over outsiders.

This surmise proved to be correct. But putting it in practice involved diligent search of personnel records, and many patient weeks spent in interviewing prospective counselors. For example, in order to obtain the 40 women needed at the San Diego plant, the company's largest establishment, where the system was first installed, 250 women were considered, and about 100 were interviewed. Of these, 60 took the training course, and 40 were ultimately assigned as counselors. A similarly careful advance selection is being made in each of the other plants as the counseling service is installed there.

The preferred candidate for the position of woman counselor is a woman between 28 and 45 years of age, who has formed good work habits and is used to the discipline of work. She must realize that combatting labor turnover among women employes will rest to a large degree in her hands, and she must view her work as important and serious.

The ideal counselor is possessed of poise and is neat in appearance. But extreme good looks are not an asset here, since women workers will often hesitate before consulting a woman who is too good-looking. She must have dignity and kindliness of manner. Her voice must be well-modulated, not too high in pitch. Diction also must be excellent. Voice and diction cannot be trained into her during the course, though their importance is emphasized; for in time of stress both will revert to their original levels.

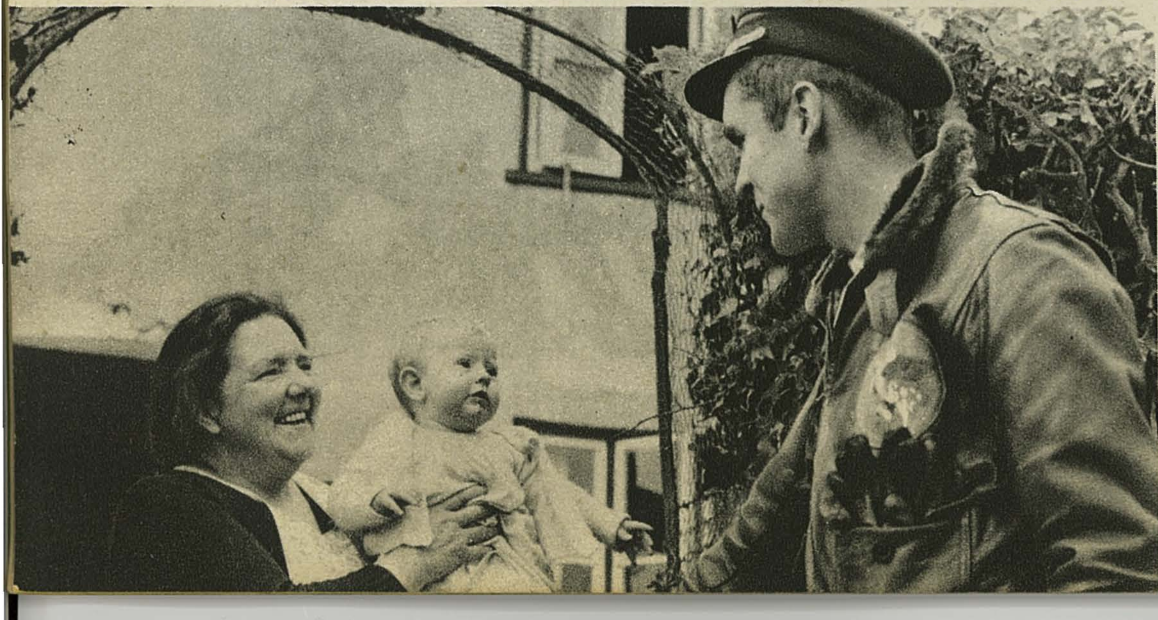
College training is not of particular importance. Women who have had experience in meeting and dealing with people of various types in the course of a day are particularly apt candidates.

In the training course, the student is drilled in factory practices and policies, so that she will be able to answer any question about them. She is familiarized with the city in which the plant is located, its residential, school and recreational facilities. She becomes a walking information bureau; she is filled with facts and is taught to retain them.

ACCLIMATING women employes to their life in the plant at Consolidated Vultee has become a major function of counseling. A counselor meets a newly hired woman when she comes to work the first day, takes her through her building and points out time clocks, restrooms, and first aid stations. The counselor then introduces her to her department head. Within the first week the counselor requests the new employe to come to her office to talk over her work or adjustment to her department and to her surroundings, and

AIR SAILORS IN ENGLAND

Pilot and co-pilot of a Navy Liberator, in light of instrument panel, prepare for take-off. Below: A Naval Lieutenant from a near-by Liberator base says hello to friends in town.



Air crewmen celebrate their leave in London.

discusses more things pertaining to the woman's department and job.

If the counselor feels now that the job adjustment has been good, her contact with the employe goes no further, unless the employe or foreman should wish to contact the counselor again. If, on the other hand, she feels that there has been a maladjustment of the employe, she tries to ascertain all reasons for this misplacement or feeling of unrest, and as soon as she has all the facts she directs her actions through the proper channels to rectify the condition before it has gone too far.

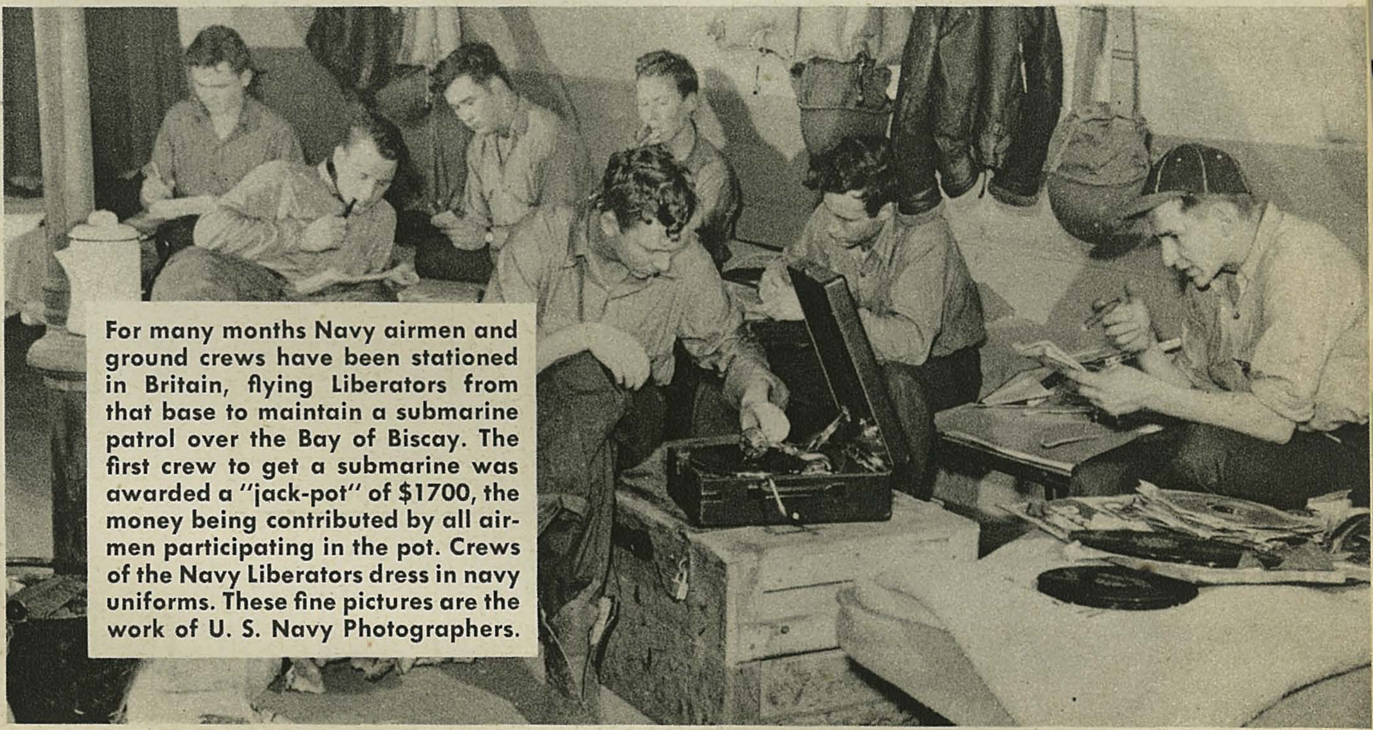
In divisions where the medical department had installed job-coding and physical-coding, the counselor assists the foreman by seeing that during a mass transfer or a "quick loan", where employes change from one department to another, they are physically coded to do the work. Often, at a time like this, the move between the two departments concerned is made too quickly for either the foreman of the department making the transfer, or of the one accepting it, to realize that certain employes are not physically fitted for the job that they are to do.

Foremen busy over production problems sometimes overlook the fact that 45-year old Mrs. Smith, who is the mother of four children, should not be working in a cramped position inside the nose of a Liberator. This is where the counselor comes to the rescue of both women and foremen. Upon investigation of such a situation, she brings to the foreman's attention the fact that Mrs. Smith should be given work suited to her physical code. The woman is benefited by being changed from work which might cause her physical harm, and the company benefits from increased production when the woman is given a job she is physically capable of performing.

The counselor makes it possible for any woman employe to receive emergency messages from the outside promptly and under considerate conditions. With a personnel gathered from all over the world, hundreds of messages a day are received. If a death has occurred, for example, and the employe needs advice and help, or a company car to get into town, or railroad reservations, or what not, these are provided as a matter of courtesy.

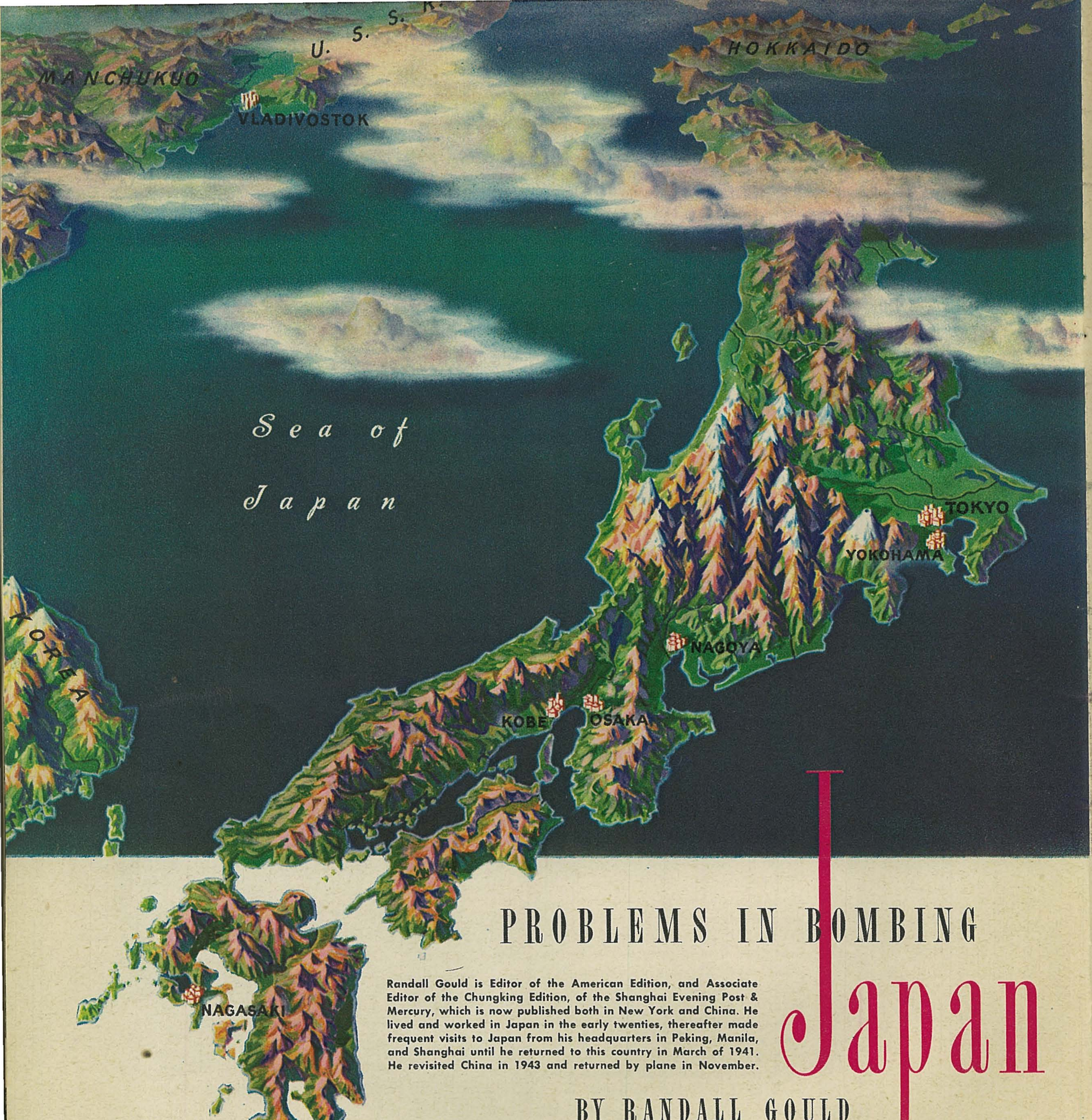
The personal lives of employes are considered their own affairs, and counselors do not attempt to solve personal problems not related to the job. They do work with agencies, such as the Child Care Center, and with school authorities, in order to help adjust practical family problems and thus enable workers to continue their employment. They help recreational centers to organize entertainment that would be of interest to employes on all three shifts, and keep employes informed of this entertainment. They give advice on community organizations that will render service to employes.

By and large, however, their responsibility ends at the factory gates. The woman counselor program has been devised to help women workers regulate their own lives, not to do it for them.



For many months Navy airmen and ground crews have been stationed in Britain, flying Liberators from that base to maintain a submarine patrol over the Bay of Biscay. The first crew to get a submarine was awarded a "jack-pot" of $1700, the money being contributed by all airmen participating in the pot. Crews of the Navy Liberators dress in navy uniforms. These fine pictures are the work of U. S. Navy Photographers.

They live in Nissen huts, stove heated, drink lots of coffee, play the "gramophone," hope for exciting developments. Below: Silhouetted in the English dawn, Navy Liberators seem crouched to spring to their patrol mission.



PROBLEMS IN BOMBING Japan

Randall Gould is Editor of the American Edition, and Associate Editor of the Chungking Edition, of the Shanghai Evening Post & Mercury, which is now published both in New York and China. He lived and worked in Japan in the early twenties, thereafter made frequent visits to Japan from his headquarters in Peking, Manila, and Shanghai until he returned to this country in March of 1941. He revisited China in 1943 and returned by plane in November.

BY RANDALL GOULD

A WONDERFUL little people, the Japanese! But — not so wonderful that another Doolittle raid or two couldn't virtually destroy their toy country, set fires raging through millions of their wood and paper houses, terrify them out of their few wits, and bring Emperor Hirohito cringing for terms of surrender. So millions of Americans have patronizingly thought, and most of them still look for quick, easy victory, once America's admittedly wonderful Liberator bombers start to march across Nipponese skies.

Maybe. There is nothing wrong with our Liberators. The only uncertainties lie in the other camp.

First, what about those wood and paper houses? They exist. But their construction isn't so simple as generally thought. Built to keep standing through Japan's virtually daily earthquakes, flexibly yielding to shock, and with their weight carried on timbers up-ended on hollowed-top stones, they will endure even bomb concussion (against which they are proofed by the accident of being in an earthquake zone) far better than many of our Occidental structures.

They are seldom more than two stories high. Isolated country homes still have dry thatched roofs. But in the cities the roofs are mostly of tile, or sometimes of copper — good armor against incendiary flames or sparks even though unable to stand a direct hit. Mud stucco often covers all sides except the southern or garden exposure.

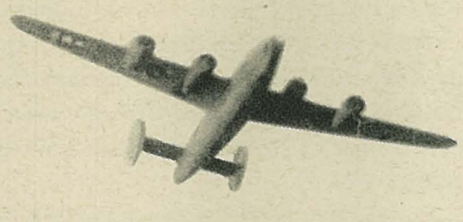
Most important of all is Japan's fire experience, and her years of reconstruction based on that bitter-bought experience. Fires in Tokyo are with good reason called "Yedo blossoms" (Yedo is the ancient name of Tokyo). In 1657, for example, half of the city was destroyed by fire, with a loss of 107,000 lives. Yokohama has been wholly destroyed by fire at least three times.

Fire is therefore no novelty in a country which has even developed special names for a large variety of conflagrations or circumstances having to do with them. "Tsuke-bi," for instance, means an incendiary fire. A fire starting in one's own house is a "jikwa." A fire originating next door is a "morai-bi."

For decades, and particularly since the great earthquake fires of 1923 in Tokyo and Yokohama, a vital factor in all city reconstruction projects has been the provision of wide "fire lanes" designed to keep conflagrations from spreading — whether originating from quake, air-bombing or other cause. Historically the great enemies of Japan have been "kaji to jiishin," fire and earthquake. And air-bombing is only a human-wrought combination of the two. Japan unites safeguards old and new to meet today's perils.

And she is prepared emotionally. In the words of Hillis Lory, who was onetime member of the faculty of Hokkaidi Imperial University and author of *Japan's Military Masters*: "Japan was the first nation to be air-raid-minded. Since 1933 she has prepared the nation physically and psychologically for enemy bombings. Anti-air-raid drills in Japan simulate the real thing."

All of us who were in Japan during recent years have vivid recollections of these drills, in which every carefully disciplined Japanese takes a part. Women suddenly appear at the alarm in "mountain trousers," nipped in at ankle and baggy above, to do their part in heavy work. Army planes, representing the arrival of an enemy, drop dummy bombs — incendiaries colored red, explosive projectiles indicated by white paint, yellow for gas, black for time bombs.



A Civilian Defense Corps is ready at any hour. Each home must keep water and sand ready. And, as was noticeable during the 1923 conflagration, such cities as Tokyo have half-forgotten ancient wells and palace moats to draw on, if water mains are broken.

Everything in these mock drills is as close to real air-raid conditions as may be. It is part of Japanese training to be ready for emergencies which historic experience has shown are always around the corner. Visitors as far ago as 1935 were struck by the — even then — 100 per cent observance of blackouts, rigorously enforced by youth volunteers and police. By night, even then, searchlights played in the sky hunting for aircraft. Guns fired. "Wounded" were carried to first-aid stations.

Those who have watched the Japanese taking suffering and death as normal experience know that when the time comes there will be an imperceptible shift from the pretended to the real. That has been true of other lands. Japan's fatalism, worship of the heroic, spirit of self-sacrifice and glory in dying for the native land, combine to assure that air-bombing will hardly do any immediate job of wrecking the people's morale — whatever it may do to homes, factories and shipyards.

The livelihood of city dwellers can be interfered with by bombing in Japan as elsewhere, of course. Food must come in from the country, but it need not be varied or lavish. Boiled rice, pickles, seaweed and any fruit in season keep things going. This can be transported by pole-bearer and handcart, if motor transport and railways break down. For service of this sort, war difficulties and hazards will only increase the number of volunteers in such a country as Japan. In times of emergencies boy and girl scouts, in Japan as in China, have taken on adult duties. During several accidental air-bombings of the International Settlement and French Concession of Shanghai during three months of nearby hostilities in 1937 I took many photos within a few seconds of the time the blasts went off, and uniformed Chinese children are in evidence in every picture, giving help even ahead of the arrival of police and ambulance squads. My belief is that in comparable situations the Japanese boys and girls will do the same, with even better discipline and coordination because of rigorous official supervision conducted for years past.

JAPAN'S industrial sections have long been a special subject of consideration in connection with potential air-raids.

Secrecy has been the rule in Japan to an incredible degree in connection with almost every sort of industrial enterprise. This has been particularly true since around 1931, but it started years earlier and sometimes resulted in ludicrous situations. American and other experts were taken to Japan to conduct certain operations only to find themselves hardly able to get into the factories where they were to work. They never were permitted to stray from their immediate tasks, and once their usefulness had been expended — mostly in teaching Japanese associates — they were whisked away. American airplane technicians went out of Japan angry because super-cautious hosts had let them assemble and instruct, but never fly.

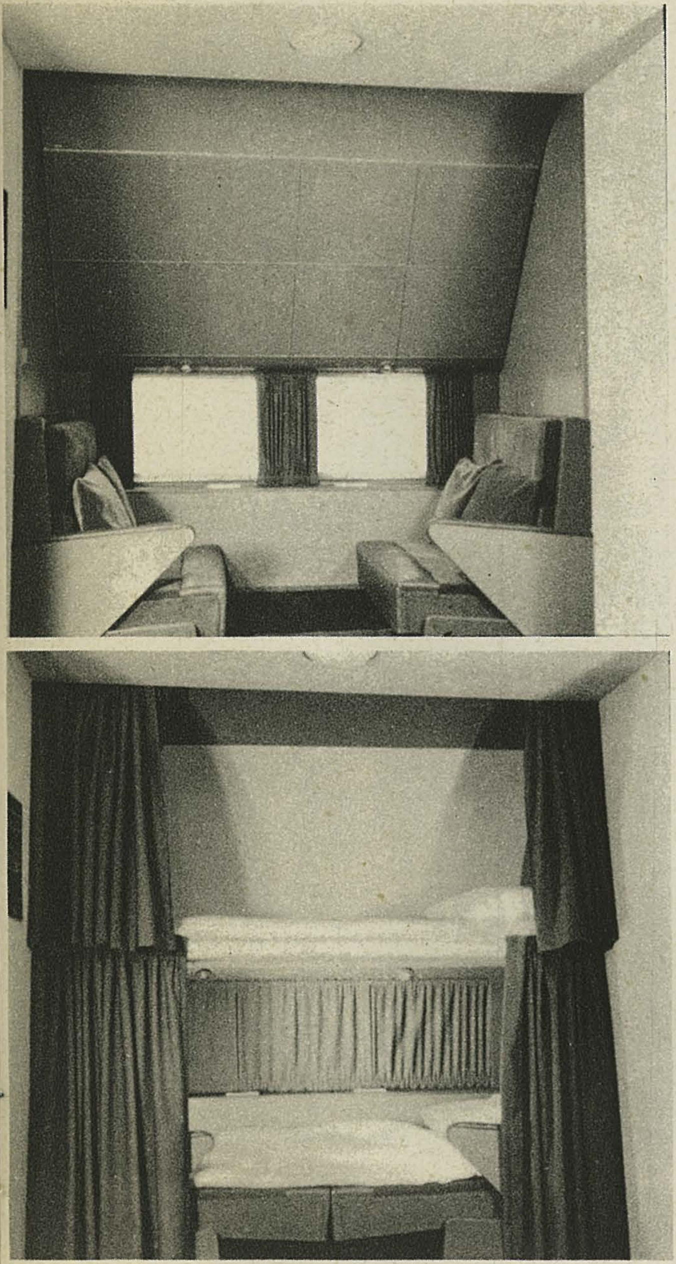
Especially after 1937, official statistics on manufacturing and similar subjects dried up to almost nothing. A Japanese employed by the American consulate in Formosa was actually arrested because he tried

Americans landing in New Britain as Liberator squadrons bombed the Jap positions.

European Photo

light, from bright sunlight to complete darkness.

In his interior designed to show a sleeper plane fitted more conventionally like today's Pullmans, Mr. Dreyfuss offers the sofa seats pictured on page 19. Designed in a style familiar to present-day railroad travelers, they are wider and broader than Pullman seats, are equipped with lounge pillows, and are correspondingly comfortable. Tall men will be happy to learn that six and a half feet of bed length are provided by this "Pullman" design. The passenger in the lower berth sleeps approximately 17 inches off the floor. The passenger in the upper berth has his own window built into the fuselage.



The berths on both sleeper designs are entirely self-contained, and each can be made up in less than five minutes' time.

These new designs provide space more efficient and more flexible, in meeting the changing demands during year-round operation over long routes, than any yet devised. All of the four seating arrangements, for instance, can be used in combination with each other. If passenger requirements over the route on which the ship operates are such that both back-to-back and conventional seating are wanted, both types can be installed. Similarly, one section of the ship can be furnished for day or "coach" passengers, while another section can be fitted for sleeper passengers.

To select his fittings for the interiors, Mr. Dreyfuss made a survey of suitable lightweight products of manufacturers all over America. A room was set apart for assembling samples of textiles, plastics, lightweight metals, and all mechanical innovations of possible aid to the traveler.

Colors were given special study. It is interesting to observe that Mr. Dreyfuss seeks to surround his plane passengers with earthy colors. Soft browns dominate. He feels these give the air traveler a greater sense of psychological security. In the role of artist as well as a designer, he puts great stress on the need of assuring the passenger psychological comfort (which is usually an unconscious reaction) as well as the more obvious physical conveniences which passengers appreciate.

The need for weight economy is a carefully calculated factor in every part of his design work. Some airlines believe that an extra pound in plane weight costs $50 a year in lost revenue. Hence resin-bonded paper, plastics, thin wood veneers that are bonded to paper or aluminum, are used to save all-important poundage.

Upholstering is of special weaves. Loosely-woven strong cloth is used to provide sound-absorption. Lightweight leather is used to finish the plane's main bulkheads, both to add a luxurious feel and to provide maintenance ease. Floors are covered by lightweight carpeting.

Colors, as already noted, are chosen to make dark tones to dominant. Warm gray and rust brown are used in one interior scheme. Wood brown and soft green are combined in another.

Many details of the Dreyfuss fittings, unimportant in themselves, show the care and imagination expended on his designs. Thus soap is provided for the washrooms in the form of soap-impregnated paper, instead of heavier bars. In the seating scheme of the coach, for instance, the seats are canted at an angle of five degrees of a right angle to the line of flight; the effect is to move the seat on the aisle slightly forward, so that the passenger there is given more visibility and a feeling of more privacy.

All of the Dreyfuss work in interior plane designs, it need hardly be emphasized, is in the nature of creative thinking for a future not yet here. Consolidated Vultee is straining every present capacity to produce the planes our fighting men need today; Model 39, for which these designs have been specially created, will not be put into commercial production until the war ends.

I. M. Laddon, executive vice president of Consolidated Vultee who is known internationally for his famous Liberator design, emphasizes that Model 39 is not the biggest plane being created by the Corporation's engineers; but it does illustrate in size, load capacity and speed the type of plane that many believe will be most practical during the initial stages of the post-war development of air-routes. With a top speed of 270 mph, and a maximum range at 200 mph of more than 4,000 miles, it will fly 48 to 52 passengers and baggage non-stop over the longest trade-route ocean crossing. According to Frank Learman, vice president and general sales manager of the company, a plane of this capacity should be no less in demand for domestic service than for trans-ocean crossings.

Model 39 incorporates the highly successful Davis Wing, power plant and landing gear of the Liberator bomber — features which have helped make the Liberator the greatest long distance heavy bomber America has put in the war theatres to date.

The first 39 will probably have been test-flown before this reaches the reader.

Press Association

Liberator over Jap airfield, Marshall Islands.

to get routine annual figures on the number of motorcars on the island; in a lengthy battle for his release it was the American authorities who finally weakened. Visiting correspondents who asked for production and trade statistics began to be treated as spies; after Pearl Harbor virtually the whole Allied press contingent was put in jail (not internment) and interrogated on the theory that they were intelligence operatives for their governments — as indeed was the case with Japanese newspapermen abroad.

Most of what was known publicly on such points as ship and plane manufacture turned out to be wrong, and there is reason to believe that the Japanese skilfully helped spread stories of how stupidly they copied the inventions of others, so poorly that the planes crashed, merchant ships turned over and battleships came apart from the firing of their own guns. It was a technique used even before the Russo-Japanese war, when the Russians were shown not Japan's best troops, but her worst, expressly to mislead all the Russian Generals.

Liberators heading toward Paramushiru Island.

Acme

Construction in Japan's industrial districts is not of wood and paper but of brick, stone and metal. Not only are buildings fire-proofed. They too are made shockproof, due to the double expected perils of earthquakes and bombings.

Japan does have her industrial establishments pretty closely concentrated, despite some efforts to spread into such territory as northern Hokkaido and Manchuria. The main industries center in four areas, reading on the map from east to west: Tokyo-Yokohama, Osaka-Kobe, Nagoya, and northern Kyushu Island. The group from Osaka to Kyushu is a bare 400-mile stretch overall, not much over an hour's bomber flight.

But there is no ignorance about this on the part of the Japanese, and they have taken such steps as they can to improve the bad points of their position. This territory is still extremely hard to get at, far removed from any bombing bases we yet have. And the bare statement of facts is deceptive.

Not all of Japan's war industry is in factories. Much decentralization of war work has been effected, and a great deal of it is done in individual households. These in turn could scatter still more, in time of a need not yet developed. The example of other Oriental countries under bombing, as demonstrated in such cities as Chungking, Calcutta and Colombo, shows that it takes only a few hours, in time of urgent necessity, to spread whole urban populations among relatives and friends in the hinterland.

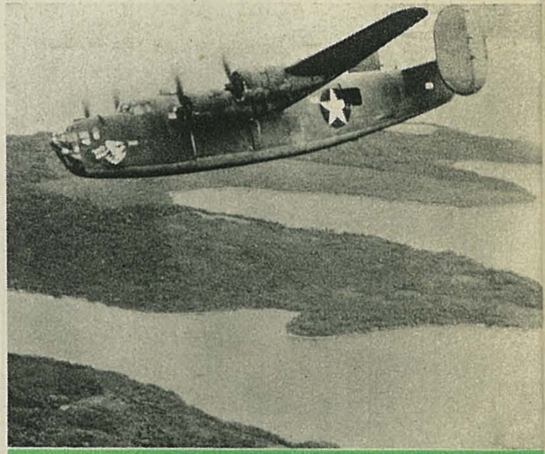
There are of course some big cities. Tokyo has a peacetime total of more than 6,700,000 people, Osaka has over 3,200,000, and the empire as a whole, including Korea, is about the size of Texas, packed with seventeen times Texas's population.

But nobody outside Japan knows how many remain in the cities today. What we do know is that a good while back the authorities ordered everyone out of the cities except essential war workers. To prepare for the day of invasion, Japan is now rumored among the Chinese to plan removing her capital and Emperor from Tokyo to Hsinking, capital of Japan's puppet state of Manchuria.

Often ignored are certain handicaps under which our attacking aircraft must operate when they go against Japan. The splendid mission of Doolittle and his comrades, launched from carriers, was technically a stunt — doubtless not the sort of thing we shall use as routine. For steady attack, land bases are needed. So far, we remain out of land range of Japan's four main islands.

After we get near-by land bases, we shall find the Japanese still protected by their weather. The whole Japanese island group is subject to fog, rain, sudden cold fronts. All sorts of odd meteorological conditions there plague even peacetime transport fliers fearfully. They are bound, with the best of luck on our part, to take constant toll of attacking planes unprotected by navigation guides. Crashes against mountains are frequent in normal operations of the Japanese themselves, aided though they are by ground observers and radio reports.

Now the newly-extended Japanese empire provides us with many targets outside the main island group. In fact, most of our targets up to the present have been places few Americans ever heard of before. It does not appear that this new "Asia for the Asiatics" has any tremendous industrial concentration, though there are some few points where some industry is present and no doubt relatively vulnerable.



Acme

Liberator bombing Kairiru I. in New Guinea.

Hokkaido has been mentioned. Mukden in Manchuria has a certain concentration of new industries. Along the China coast there is something at Tientsin, more at Tsingtao, most at Shanghai, and probably a bit here and there up the Yangtze at such places as Hankow. Hongkong and Canton have also been put to work, though their native populations seem unable to find enough industrial or other employment to keep from being in a semi-starving condition and the cities have half-emptied. Use is made of Manila, Hanoi, Singapore, Batavia. There are no doubt important naval targets at Singapore, Manila and Hongkong. But we are still out of bomber range of most of these, and as yet within effective continuous bomber range of none.

The places just mentioned as possible targets are actually of prime importance to Japan. For Japan's extensions have done a great deal to conquer her need for raw materials.

Take for example her holdings in Indo-China, with its 25 million population, including a good many fighting men formerly mercenaries under the French. This area has coal, iron, rubber, tin, lead, zinc, rice, cattle, hides. Thailand has tungsten, antimony, manganese, iron, coal, tin, silver, quicksilver. Malaya has rubber, sugar, pepper, tin. Burma has oil, tin, teakwood, silver. The Netherlands East Indies have a world monopoly of quinine bark, one-third of the world's rubber, also tin, oil, sugar, tobacco. The Philippines are rich in both mineral and agricultural products which the Japanese can exploit as we did not, gaining iron, silver, lead, zinc, copper, petroleum, asbestos, manganese, copra, rice, sugar, tobacco, and a world monopoly of Manila hemp.

Mere bombings of those vast areas will hardly serve us. We must either take them away by actual capture, or sink Japan's ships in such quantities that she is isolated from them. For the present, much of our vital strategy centers around ship sinkings. By March of this year, it could be estimated that some 70,000 Jap soldiers, stationed in isolated island bases, were starving to death. This is one measurable result of Japanese ship losses that we estimate at a total of 1358 since December, 1941. We cannot estimate replacements, but we have evidence of Japan's steel shortage in the fact that she is falling back on the use of wooden ships for her communications — even sailing vessels. Our own Navy and Air Forces are thus having visible success in cutting the Jap links of empire. In March of 1944 General Chennault could say:

"The sea routes between the Japanese islands and the Japanese Empire are the jugular of the Japanese military system. We have stabbed tirelessly for the jugular. Among the great air forces of the United States, the Fourteenth is still small. But since March 1943 we of the Fourteenth Air Force have certainly sunk 274,939 tons of enemy shipping, and probably sunk or damaged another 282,350 tons."

We are now managing to strengthen General Chennault; a Japanese broadcast in March announced he had 400 planes. Meanwhile our Seventh Air Force in the Central Pacific — a theatre of over 16,000,000 square miles — is reducing the island bases we need as stepping stones to the Asiatic Continent for our Tokyo approach.

STILL, despite all this progress, those of us who know our Japanese would not expect them to be downhearted. Japanese fortitude has not been exaggerated. During those dreadful Tokyo days and nights of the 1923 earthquake I saw tears shed but once — and that not by a Japanese, but by an American who had seen his wife, pinned by a fallen building, burned alive.

The "Eddoko," or native residents of Tokyo, moved quietly and purposefully both during the catastrophe, and in the following clearing and reconstruction which began before embers had cooled. In China the Japanese troops were never seriously air-bombed; but for many days after the beginning of the Shanghai hostilities on Aug. 13, 1937, the flagship Idzumo was repeatedly a target for attack by Chinese pilots flying American planes — and the Idzumo remained throughout either tied to the consular wharf, or moored a few yards away in the middle of the Whangpoo River.

This may have expressed merely a contempt for Chinese aerial marksmanship of the period, yet it made a great impression on the international community which observed it firsthand.

During the period since Pearl Harbor, Tokyo leaders have made it rather a special point to warn the people that they must expect Allied air-raids in due time. This is in the tradition of Japanese psychology, which draws strength from expectation of the worst and a stiffening of the national family strength to meet it. Our radio commentators have chosen to read incipient panic in Japan's frequent official warnings about air-raids. The Japanese don't think in such fashion.

They see us preparing to bomb them — but they can think of England. Germany, with bases just across the channel, could not

Press Association

Liberator over Jap-held Nauru, Marshall Is.

reduce England to submission by bombing despite all her advantages of supply. Nor did Germany get troops across the Strait of Dover, a mere 22 miles. Japan's own Strait of Dover — the Strait of Tsushima, which separates Japan from Korea — is five times as wide. Add to this the fact that we have yet to take the bases on the Chinese coast we shall require — and the further obvious difficulty we shall have in supplying such bases with the huge quantities of materiel that great air missions demand — and you see some of the grounds for Japanese confidence.

We can eventually beat Japan. But we are still many miles away from her in the Pacific, we have not yet made contact with the bulk of her armies or her navy, and the battles to date are only preliminary sparring. Our real war with her is just about to begin.

Liberator mission over Salamaua, New Guinea.

Acme

Official Photo U. S. A. A. F.

AIR LEAPS TOWARD *Tokio*

TRANSCRIBED FROM AN INTERVIEW WITH MAJ. GEN. WILLIS H. HALE

General Hale, Commanding General of the U. S. Army Seventh Air Force, authorized this manuscript in March to serve as "background information."

Because it is such a forthright statement of facts vital to every American, permission was sought to publish the major portion of it as an explanation of what we are driving toward in one of the greatest theaters of the World War. Says the General: "The Mitchell-Liberator combination is proving itself beyond our greatest expectations."

MANY people in the United States have virtually no conception either of its watery vastness or of air fighting conditions in the Central Pacific. The mission of the Seventh Air Force, present and future, involves land based air operations in a theater which extends over some 16,000,000 square miles, or more than five times the size of the United States.

The imminent threat of invasion of the Hawaiian Islands was not lifted until the Battle of Midway. Then we required bases from which to operate. These were gradually built up 2,000 to 2,400 miles from Oahu in the Phoenix and nearby islands and later in the Ellice Group.

These distances are important. Any understanding of the war in the Pacific must be based on an appreciation of distance.

The climate is wonderful in much of this theater, but the weather is awful. It is rapidly changing and treacherous. Dependable forecasts are rarely available to the air crews of the Seventh Air Force. In operations against the Marshalls, for example, Seventh Air Force fliers were faced with a "moving front" which sometimes reached an altitude too high to fly over and which often forced the pilots to fly, in a driving storm, a few feet above the water.

Having occupied the Marshalls for more than twenty years, the Japs were fully cognizant of these conditions. Experienced Japanese pilots believe it the most difficult theater of war in which to maintain sustained air combat. This was possibly a major reason why they have not sent so many replacement planes into this area as they poured, despite their continuing heavy losses, into the New Britain-New Guinea sector. There was no use sending very large numbers into the Central Pacific where often their pilots couldn't fly them.

One of our objectives of the air war in the Pacific is to secure a chain of bases which will put the Japanese homeland within effective range of our heavy bombers. The Marshalls operation was a long step in carrying out that plan. It was not sufficient to render the Marshall Islands useless to the Japanese. They were needed by our forces for air bases, hence had to be occupied.

The Seventh Air Force was well on its way to accomplish the "neutralization" of the five principal Jap bases in the Marshalls as early as two weeks before the occupation. (By neutralization is meant denying the enemy his intended use of a given base.)

The Seventh Air Force, by its day and night bombing of all major Japanese installations in the Marshalls — with Liberators, Mitchells, Dauntless, P-40 Warhawks, everything we had with wings on it which could carry a bomb — helped largely in rendering impotent the ground defense installations which the Japs had developed, and on which they had confidently counted to defend those islands successfully.

In the Marshalls campaign from 80 per cent to 92 per cent, depending on the type

General Hale inscribes a 1000-pound Liberator bomb: "From Nimitz to Hale to Tojo."

of plane involved, of all bombs dropped by the Seventh Air Force *hit the target at which they were aimed.* This record is as great a tribute to the excellence of the Norden bombsight as it is to the skill of Seventh Air Force air crews. We use the Norden bombsight exclusively in our heavy bombers.

As a medium and heavy bomber team the Mitchell-Liberator combination is proving itself beyond our greatest expectations practically every day in the Pacific. The planes fly shot up, through weather so turbulent it threatens to pull them apart. Almost never do they have fighter protection; the distances are too great. Frequently they must fight their way into and out from a target. Sometimes they get blasted full of holes; sometimes they get motors shot out. But just about always, if the wings stay on, they get home. The men and women who are building those airplanes deserve great credit.

The Marshall campaign has provided the Japs with a handwriting on the wall — or a handwriting in the sky — which must be legible to all of them. The pattern for the future, at least so far as the Air Force is concerned, will be to render ineffectual every island group which stands between us and the Japanese homeland. The Seventh Air Force has already been blasting at the Carolines. Anyone who wants to know where it is going from there need only look at the map.

These operations are largely concerned with securing air bases. But they are in no sense "island hopping"—a term used largely to indicate a tortuously slow approach to Japan. Through combined operations with the Navy and the Marines, we are advancing by leaps and bounds.

The Seventh Air Force commenced its bombing of the Gilberts on November 13 from bases roughly 4,000 miles from Tokyo. About 85 days later we were set in the Marshalls and our bases there are about 2,500 miles from Tokyo. Thus was gained 1,500 miles, an average of more than 17 miles a day.

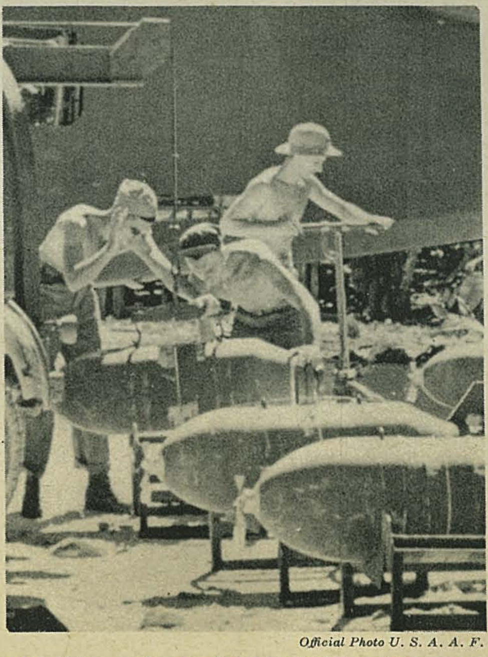
The men who fight the air war over the Pacific carry on as tough a battle as is being waged anywhere in the world. They sleep on canvas cots in tents and under mosquito netting. Their showers are gasoline drums with a nozzle, and they wash and brush their teeth and shave in tin hats. They are 2,400 miles from the nearest American community, the nearest dance, the nearest normal social life.

If they are shot down or disabled over the target they face what to them is the stark horror of capture. If they go down in the ocean their chances of rescue, despite the vigilant Navy rescue service, are problematical. Yet they must fly constantly. During some months every bomber in the Seventh Air Force forward echelon has averaged six missions. Considering the distance traveled, that is, in my opinion, more flying per airplane than in any other theater in the war.

Because of conditions, the Seventh Air Force has had to become a versatile Air Force. Bombers are used occasionally as fighters, and fighters are regularly used as bombers. Heavy bombers of the Seventh Air Force constantly have to land and take off from strips which any rule book will say are impossibly short for a B-24.

For ferrying fighters over long distances, the Seventh has developed a convoy system in which the fighters fly formation on a B-24 which does the navigating — a hazardous undertaking, but necessary because of weather. The Seventh has developed its own transition training schools, in which every air crew member must take a post graduate course before he is qualified to fly in the Central Pacific.

The Seventh Air Force is operating bombing missions longer than those in any other theater. The longest was 2,769 miles, the average is more than four times the distance from London to Berlin. All flights cover great water distances with no intermediate landmarks. The usual checkpoints such as rivers, mountains and railroads, are non-existent.



Official Photo U. S. A. A. F.

"Bombing up" one of General Hale's Liberators.

The navigation must be perfect. Targets are pin points on islands which themselves may be smaller than the factory area of some prime targets in Germany. It isn't enough that bombers hit the islands; they must hit the target. Seventh Air Force bombardiers must be able to get hits from an altitude of 12,000 feet, an average of less than 250 feet from the center of the aiming point. This is doubtless the most consistently accurate bombing being done anywhere in the world.

In a mission over Rongelap, Liberator bombers were assigned the job of knocking out a radio station in a building only 35′ x 125′. The ships went in at 3,500 feet, made a perfect run and dropped their bombs squarely in the middle of the building. They use 100-pound bombs, relying on accuracy, not on tremendous concussion.

One of the most important lessons of the Marshalls campaign has been the proved facility with which the land-based aircraft of an Army Air Force can support, and cooperate with, the Navy and amphibious forces. The value of strategic bombing in the Central Pacific was demonstrated in the Marshalls. In the march across the Pacific, land-based airpower will have the dual function, proved in the Marshalls, of neutralizing the enemy air forces and preparing Jap-held islands so that they can be more successfully attacked by Navy surface vessels and carrier-borne aircraft, then stormed by infantry with a minimum of casualties.

The Marshalls campaign, under the brilliant and meticulous leadership of Admiral Nimitz, has conclusively demonstrated that properly employed heavy land-based aircraft are a vital factor in operations ahead. This campaign also revealed outstanding evidence of the unexcelled training and equipment of our Army Ground Forces in amphibious assault operations, along with our incomparable Marines. These, coupled with the unveiling of the devastating power of the guns of our expanded Navy, constitute the first really terrifying threat Japan has ever known.

Christening of a Liberator by WACS in Great Britain.

Press Association

No Milk Run

Arch Whitehouse, who has been writing air-adventure stories for years, believes he is the only accredited war correspondent with "wings up" and actual combat experience. In 1943 he was in Newfoundland, flying with the RAF on Catalinas; *Coronet* published some of his adventures there. Here he reports on a session with some Liberator pilots in Britain.

I WAS ordered to write this. The order came direct from several dozen Liberator men in Britain. War correspondents are asked many strange favors, but this was a command.

The boys of the Eighth Air Force seldom see a war correspondent in the flesh. The W-Cs, generally speaking, are not legion; there are all too few to go around. That's a mighty big air force we have over there now, and once the lads get their hooks into a correspondent, they practically take him captive.

I was at my first Liberator field exactly ten days. I went with the express idea of staying about three. I might have been there yet, only I sneaked out while most of the boys were bombing Bremen.

You see, those boys have so many ways of telling you that Liberators are the best damn bombers in the E.T.O. (European Theatre of Operations) that a three-day stay is nowhere long enough to hear their tales.

In the end they had me carrying the torch, too, which is what I mean when I say I was ordered to write this.

I'll never forget the night I dropped my baggage and typewriter in the alleged Officers' Club of the first Liberator group I visited. You'd get a laugh out of that Officers' Club gag. This one was an old World War I Besseneau hut, complete with mud, crap game table, two asthmatic fireplaces and some wicker furniture about ready for a treatment at Hot Springs. There was also some mud, drooling in under the doors. I have experienced what they blithely term "mud season" in New England, but the Old England version can give them seven holes and beat them in eighteen.

Their pin-up girls are called "Lousy Liza", "Betty the Bitch", "Louisiana Lullaby", "The Missouri Mauler" and "Dizzy Dora" . . . and they're all Liberators.

I was introduced to the mob by Captain Bill McShane, the officiating Press Relations Officer. To put everyone at their ease he explained solemnly that I wrote touching features for *Smoke House Stories*. From then on I was practically accepted. My formal initiation still hung in the balance however. I had to drink a full quart mug of nut brown ale down within just 60 seconds.

Failure provides a penalty of paying for a round of drinks.

Did *you* ever try to drink a quart of beer in 60 seconds?

"Did you ever hear of the Ploesti raid?" one of the boys opened up on me.

"Of course. What about it?"

"Well, when you write home, you tell 'em *we* did that — on Liberators. We flew Liberators, Mister!"

I JOTTED it down just to satisfy the lad. I didn't tell him I knew all about Ploesti before I started and that I'd begged Major Jack Koefod, Press Relations officer back in London, to send me to this particular field. Jack's the famous sports writer of pre-war days; he had tipped me off about this bunch. The story of that mission had made me want to meet some of the boys who had been on it.

But they didn't tell me about Ploesti — they told me all about the Liberator.

"We got a great ship," someone bellowed at me. "You talk about coming home on two engines. These babies will come home if you just hold the fuel consumption record up against the instrument panel!"

I was beginning to get the idea, anyhow. Anything the Liberator takes on automatically becomes a milk run, to hear these guys tell it.

"Listen," another Lib-lover said, taking an extra hitch in my ear. "We flew these babies all across the United States and hopped 'em across the Atlantic. Just like that! Then when we were getting set over here in Britain, turning the whole bombing schedule into a picnic, some guy ups and says: 'Oh, so you birds are hot pilots, eh? You really want something to get your teeth into? Okay! Pack your B-bags and shorts and skip down to North Africa. There's a job or two to be curried down there!' So we drop everything here, take some of the ground crew with us and we go to North Africa . . . Just like that!

"You heard about Sicily and Italy, didn't you, Mister? You heard how we softened all that up for them, just flying across the Mediterranean and smacking Salerno about, didn't you? Well then, just for good measure we knock off Ploesti for them. We did all that with Liberators, Mister."

I'm not telling you — they were telling me!

"So!" my pauciloquent friend goes on, "we fix everything for them in North Africa and then things begin to get rugged for the bomber boys back here, so back to England we fly, and here we are . . . still flying Liberators and now they're talking about an invasion! I don't suppose the Lib would have anything to do with that, do you?"

"I don't have to drink another quart of beer right off, if I don't give the right answer, do I?"

"Just you tell 'em back home that we fly Liberators, Mister!"

Bill McShane rescued me and explained: "Don't get mad at these kids. They mean well, but they're sore because the Liberator isn't getting the credit they think it deserves.

"They don't want credit for themselves. They're just trying to tell you they fly a swell ship."

"I'm just trying to be a good Joe," I pleaded.

"Sure! You're doing all right. Just take it easy and listen. They've never seen a war correspondent before."

"That makes it even. I've never run into a pack of Liberator Loons before. I hope you'll write my folks back home and tell them I went down fighting."

"What rank do you hold — as a war correspondent?" Bill asked.

"None! But I'll automatically become a Captain if I'm taken prisoner," I explained. "Nice, eh?"

"Don't worry about it. These guys will make you a General if you write just one story about their Liberator."

"Do I have to drink a . . . "

"Forget it!"

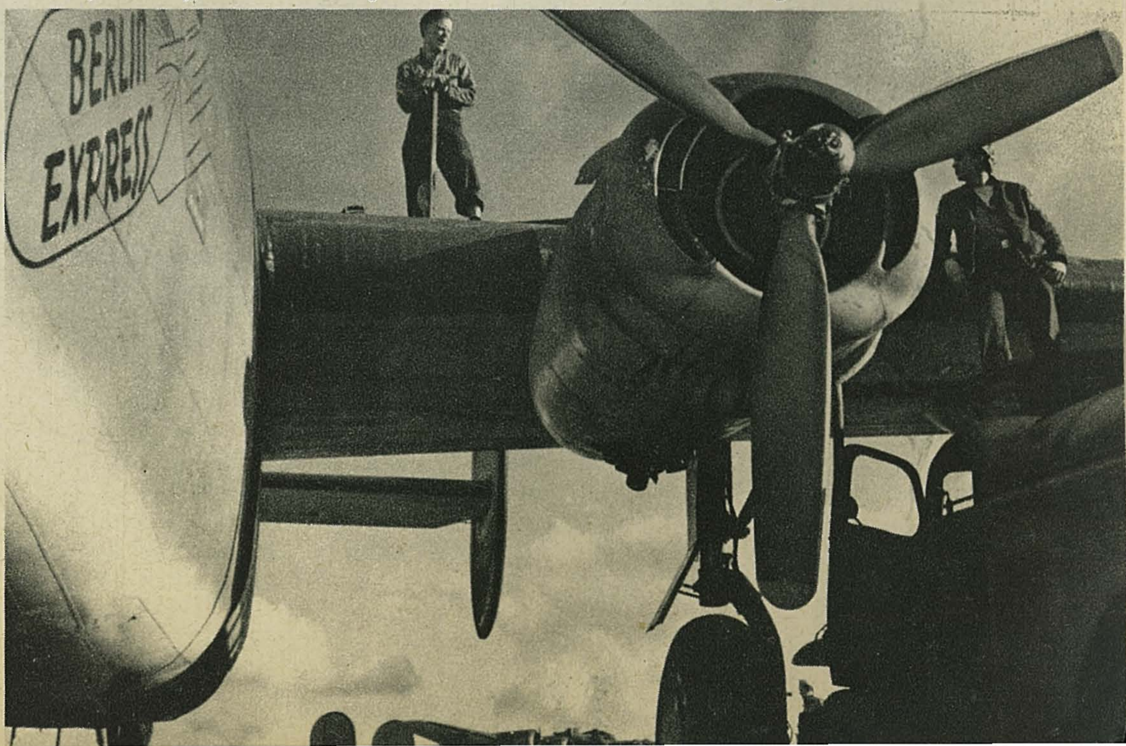
Somehow we got a meal, but my baggage had disappeared. Later, I discovered it had been taken over to one of the nearby billets, my bed had been made up and my gear laid out. I was doing all right, having a pack of officers for my batmen.

At dinner I sat at a table with a gang of Lieut. Colonels and Majors. They all had enough decorations up — and I mean decorations, not just campaign ribbons — to start an epic in Technicolor. I asked Major Kent Cooper about his first string.

The Major was still fuming about a line the *Stars and Stripes* had carried about him that day. Something about being the most fearless pilot in the Eighth Air Force. The boys don't like to be singled out for such plugs. He had been in the Royal Canadian Air Force and he'd seen plenty long before Pearl Harbor, but he just told me about the Liberator. McShane added to it by saying that Cooper spent his leaves, flying about the country trying out everybody else's bombers, and he still liked Liberators!

Major Paul Burton, another much-decorated guy who speaks in the hallowed tones of a choir-master, *almost* told me about his mob; affectionately known as Burton's Iron Raiders. But the yarn petered out to another detailed lecture on the marvelous features of the Liberator. Burton and his Iron Raiders have flown over thirty-five different countries during their tour

Berlin Express, a U. S. Navy Consolidated Liberator assigned to anti-submarine patrol over the Bay of Biscay, takes a load of "petrol", as the RAF calls it, before taking off on its mission.



Official Photo U. S. Navy

of operations — and every mile has been flown in Liberators. Knowing the censor, I won't list the countries involved. The actual list would make you whistle in high-C.

Back in the so-called club I was introduced to Captain John B. MacCormack, another Liberator Loon from Syracuse. Captain Mac, as they all called him, recognized my name at once and said he had read every story I had ever written. When I told him I felt sorry for him, he argued that I was responsible for his being in the Air Force. He had read so many of my stories about the old time war aces that when this picnic came along, he was one of the first to join up.

For the rest of the next hour or so I was Captain Mac's particular guest and he induced me to agree to go along with him the next day. That is, I would have gone, only Bill McShane talked me out of it.

"Look," he pleaded. "Just because they are flying Liberators, don't think all these missions are milk runs. You stay home here. You can get up early, have breakfast with them and see them briefed, but quit trying to regain your youth. They have enough to worry about up there, without taking a passenger along."

Bill was right, so I called it off. And it was just as well, because it turned out to be no milk run.

I felt sick about Captain Mac, because he had said I was responsible for his being in the Air Service. Two nights later in the Red Cross club a young gunner came up to me with bewilderment in his eyes.

"Didn't you go with Captain Mac on *The Vagabond King*, the other day?" he asked in a dry voice.

"No. I was talked out of it," I explained.

"Your name was up on the board," he persisted.

"I know, but I just didn't go," I said.

"Too bad," he answered, and then smiled. "I mean, it was too bad you didn't. He'd have come back, if you had."

"I don't get it."

"Didn't you know? Captain Mac was a squadron leader, but he never led the squadron. He always sent his sub-leader up front and he flew the Purple Heart corner — to protect the others. That's how he got it."

"But where do I come in?" I asked.

"Don't you see? If you had gone along, he would have played safe and flown up front. Someone else would have got it instead. Mac would have come back," he said half-accusingly.

"I'm sorry," I answered. There was nothing else left to say.

"Oh, don't worry about it too much," the young gunner said. "He was flying a Liberator, remember, and I wouldn't bet he isn't safe. I was his gunner . . . tail gunner, and what Captain Mac can't do with a Liberator no one can do. Maybe, if I hadn't been ill, it wouldn't have happened, either."

"Let's have a cup of coffee," I suggested, "and you can tell me about it."

But again, it all rumbled off into another song and dance about the Liberator and how ten to one Captain Mac would have got her down okay.

"I heard he had two engines shot out," my gunner pal explained, "but that's nothing with a Liberator. I'll bet Mac got her down safe somewhere. Did anyone ever tell you what he did at Salerno?"

I dreaded it, but I let him go on.

"Well, we were doing a bombing show around Naples, but Captain Mac stayed around too long and we had to land in Italy. We didn't have enough gas to get back across the Mediterranean, you see."

"I can hardly believe that," I taunted. "Don't any of you guys carry a cigarette lighter?"

"Well," he went on ignoring my emergency suggestion, "we got down all right, but we got plenty of stuff from the ground before we landed, and we knew we had hit none too far from the war."

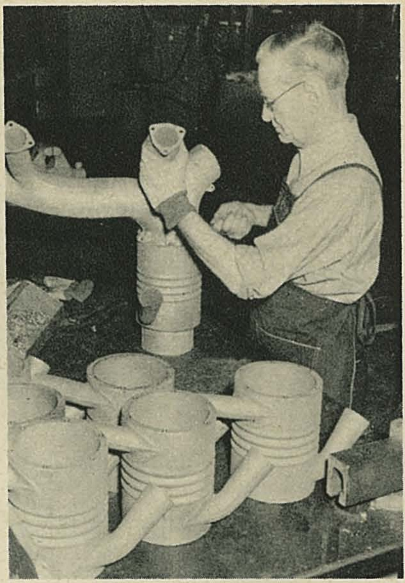
"I know," I broke in again. "You just took the wings off, taxied up the nearest road and went into action as a tank."

"Well, not exactly," he said apologetically, "but Captain Mac took a couple of the guns off and he went off up the line looking for Eyeties. We were missing for several days and did we get hell for that!"

Knowing Mac I could believe that. Too many Whitehouse thrillers at too early an age.

"Well, he's had it now," the gunner reflected, "but no guy can kick getting it in a Liberator. There's a war on over here and if I have to fight in it, I'll take my chance on a Lib."

There's no argument about it. They're crazy about that plane.



SHOP JARGON

Coffee pots, alarm clocks, bathtubs and banana peels —

That's what airplanes are made of — if you go by aircraft shop terminology.

At Vultee Field, employees don't try to memorize the myriad sets of numbers given to parts.

Ask them where 74-77003-400 is and you draw a blank look. Say in shop jargon that you're looking for a "coffee pot," and they spark. The part in question, a heater for the pilot's cockpit, actually does look like a coffee pot. It's cylindrical, has a nozzle, even a handle. You can almost pick it up and start pouring. See the picture. It's really a heater to be attached to the plane exhaust.

Other parts have been similarly nicknamed for the sake of convenience. The alarm clock, which is a gear box, is a dead ringer for its namesake, right down to the flat base it sits on. The bird cage, a fitting that goes into the tail assembly, brings to mind the gambling device from which it takes its name. So with the flutes, which are seat support tubes, and spaghetti, formed electrical conduits that, when piled into boxes, take on the resemblance of the Italian dish.

There's a lot of others — horsecollars and slingshots and hayhooks and violin pegs; butterflies, elbows, stars, fingers, and half-moons.

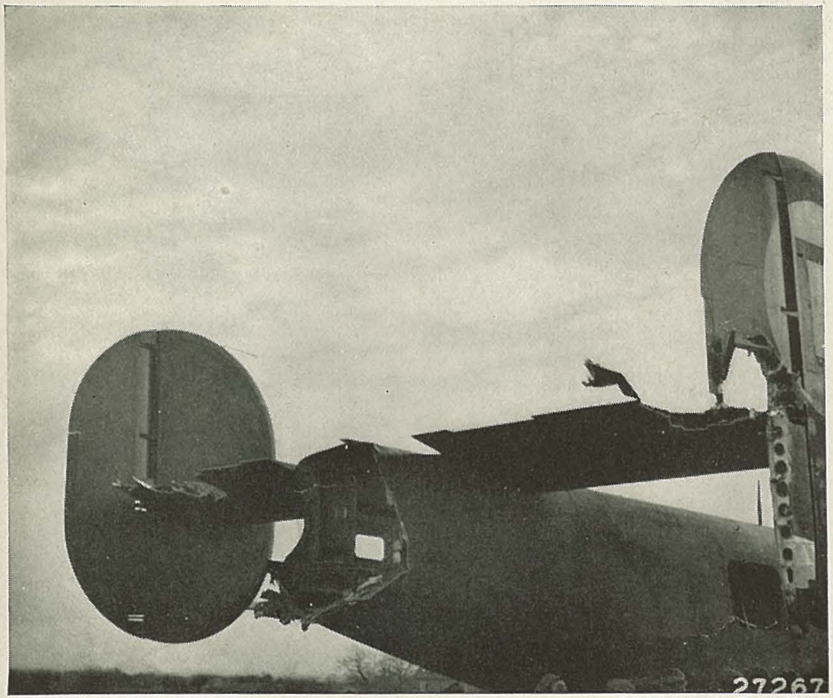
Most of the names originate with the operator who first makes the part in the machine shop or Sheet Metal department. From there they spread through the stock rooms and out to the boys on the final assembly line.

Looking for a rabbit ear? You'll find one on an airplane as easily as you'll find one in a hutch.

Why Liberators come back

[*Extract from the report of Major General Willis H. Hale,*]
[*Commanding General, U. S. Army Seventh Air Force.*]

The planes fly shot up, through weather so turbulent it threatens to pull them apart. Almost never do they have fighter protection; the distances (in the Pacific) are too great. Frequently they must fight their way into and out of a target. Sometimes they get blasted full of holes; sometimes they get motors shot out. But just about always, if the wings stay on, they get home. The men and women who are building those airplanes deserve great credit.



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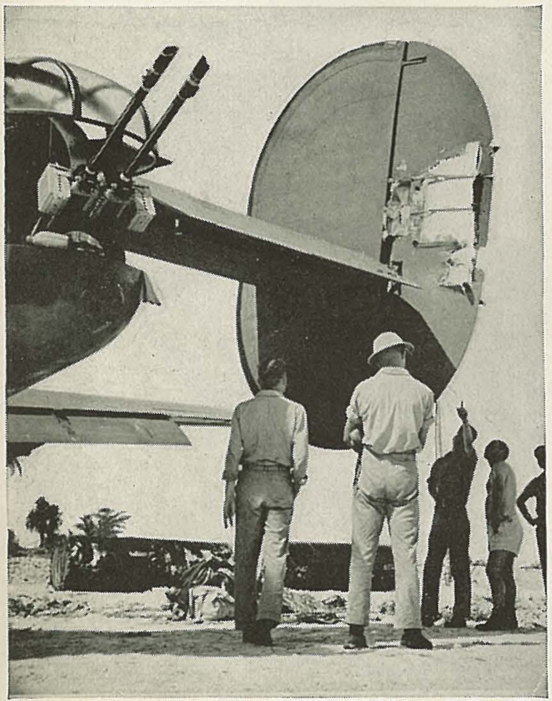

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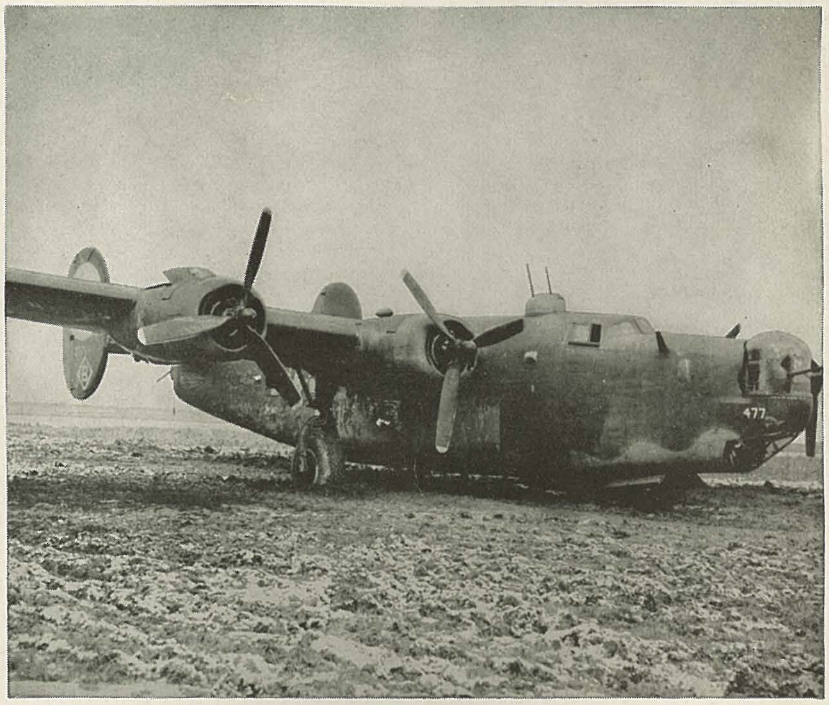

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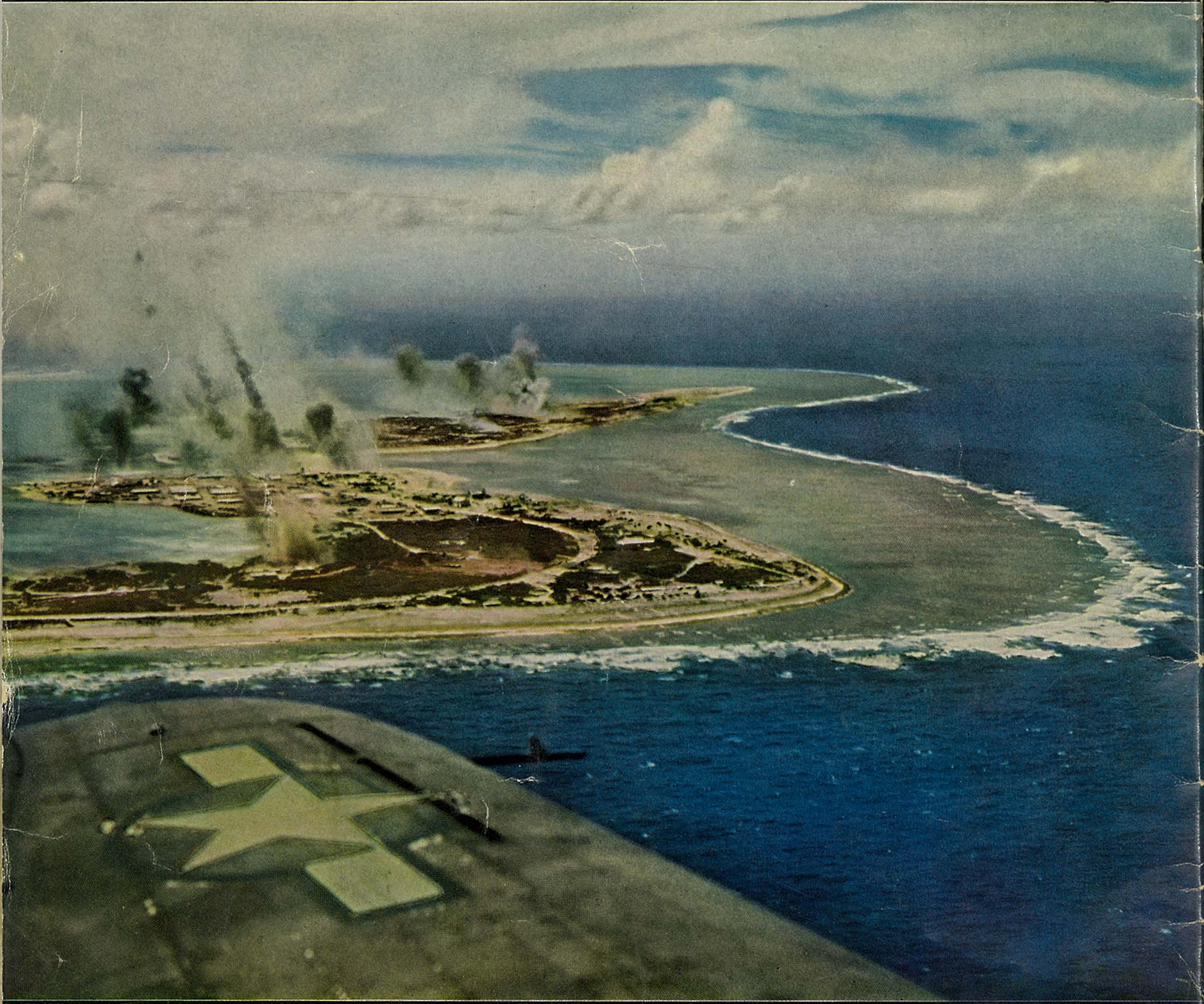


Here you see Wake Island flaming in the opalescent sea that laps its Pacific coral reefs—an official U. S. Navy photograph of our bombing of Jap installations there. Liberators as well as carrier-borne planes have assaulted Wake frequently in 1944. Navy photographers are using Kodacolor film to make a permanent historical record of such operations.

Plane Talk

MAY · 1945

The Navy's Privateer (PB4Y2)

Kodachrome by Otto Menge

The General Said South • Stop At Accra • Look At Santa Ana Now!
At Germany's Heart • Testing The Controllable Wing • Bombing With Words

Ready

Plane Talk

If you wish to share your copy of Plane Talk with a soldier in the war theatres, 1st class postage is required (15¢). You may re-use the envelope in which your copy comes to you by pasting on a label addressed to the APO number; seal the envelope. The magazine may be mailed, unsealed, to a U. S. A. address for 3¢.

MAY, 1945 • CONTENTS • VOL. III, No. 3

PUBLISHED BY CONSOLIDATED VULTEE AIRCRAFT CORPORATION

Rest for the Navy's Flyers
These official U. S. Navy pictures show two things, among others: our Navy is producing superb photography, and is giving its airmen superb care...... **1**

At Germany's Heart: What Our Bombing Did
Fred B. Barton tells you how things look from inside defeated Germany, and reports on details concerning our Liberator men and their work............ **4**

Making an Old Plane New
The Coronado is one of the Navy's older planes; but new installations like a jet take-off apparatus make it an excitingly modern aircraft.............. **8**

Map for An Air World
Here is a new kind of map which takes *your* location as its center—one that requires drawing a new world-map for every city and town in the U. S....... **9**

Testing the Controllable Wing
The Wrights used a rigid wing, with controllable ailerons and rudders; the Spratts, regarding this as cumbersome, launched something different... **10**

Stop at Accra
Lieutenant Sidney Danoff pays warm tribute to the wonders accomplished by the Air Transport Command, and describes one of its bases in Africa... **12**

"Towing Tessie Stinson"
Lieutenant John C. McGee tells of another vital war use found for those incredible pre-war Stinsons, which still fly for the CAP.. **15**

The Onward Sweep in the Pacific
This official U. S. Navy kodachrome, showing a Liberator landing in the Philippines, symbolizes a whole series of victories for our airpower............ **16**

Look at Santa Ana Now!
Sergeant Robert Segal uses G.I. language to set down a heart-warming story that will be good news to every airman who returns from combat... **18**

The General Said South
Lieutenant Phillip K. Shute says that nothing exciting happened on the trip; but he makes it sound like a mighty interesting occasion........................ **21**

Useful New Plastics
Research is a vital function at Consolidated Vultee. Here is news about three recent results of it that promise wide-spread post-war application... **24**

Bombing With Words
Captain Arthur Settel tells about a type of bomb Liberators have been using on the enemy in our little-publicized psychological warfare.................. **25**

The Far Ranging 15th
Herbert Jeffrey Harmatz, who was with Military Intelligence before he recently joined Reuters, reports on the work of an extraordinary Air Force... **28**

Lib-Looney
Lieutenant Sanfrid E. Odhner displays in three drawings a Walt Disney-ish sort of talent which makes the dignified Liberator a strange animal...... **31**

Art for Production
Skilled artists, who convert engineers' blue prints into beautiful drawings anyone can understand, do vital work in war-plane production.................... **32**

Edited by Hill and Knowlton for the Consolidated Vultee Aircraft Corporation and published every other month. Text and pictures have been cleared for publication with Government authorities. Text of any article contained in the magazine may be reprinted with or without credit to Plane Talk. Copies of most pictures, except those credited to commercial news agencies, can be made available to editors upon request. While manuscripts are not solicited, first hand accounts of experiences by men in the air forces at the fronts will be given careful consideration. All correspondence and address changes should be addressed to the office of Hill and Knowlton, Room 3301, 350 Fifth Avenue, New York 1, New York.

The Privateer

Our cover shows one of the Navy's important new weapons for the war in the Pacific — the four-engined Privateer (PB4Y-2). This long range search plane is the newest Navy plane to see action; its production is being pushed by Consolidated Vultee under an 85-million dollar Navy contract, as the company's Liberator production comes to a halt. (Its final Liberator is scheduled to come down the San Diego assembly line late in May.)

The Privateer is also being made in a transport version designated as the RY-3. The transport is operated by a crew of four, has a range in excess of 3,000 miles, carries a gross weight of some 60,000 pounds and a useful load of around 30,000, and has facilities for 28 passengers. For alternate purposes it can carry 26 litters or an equivalent amount of cargo. The Royal Air Force Transport Command is using a fleet of these transports in the Pacific.

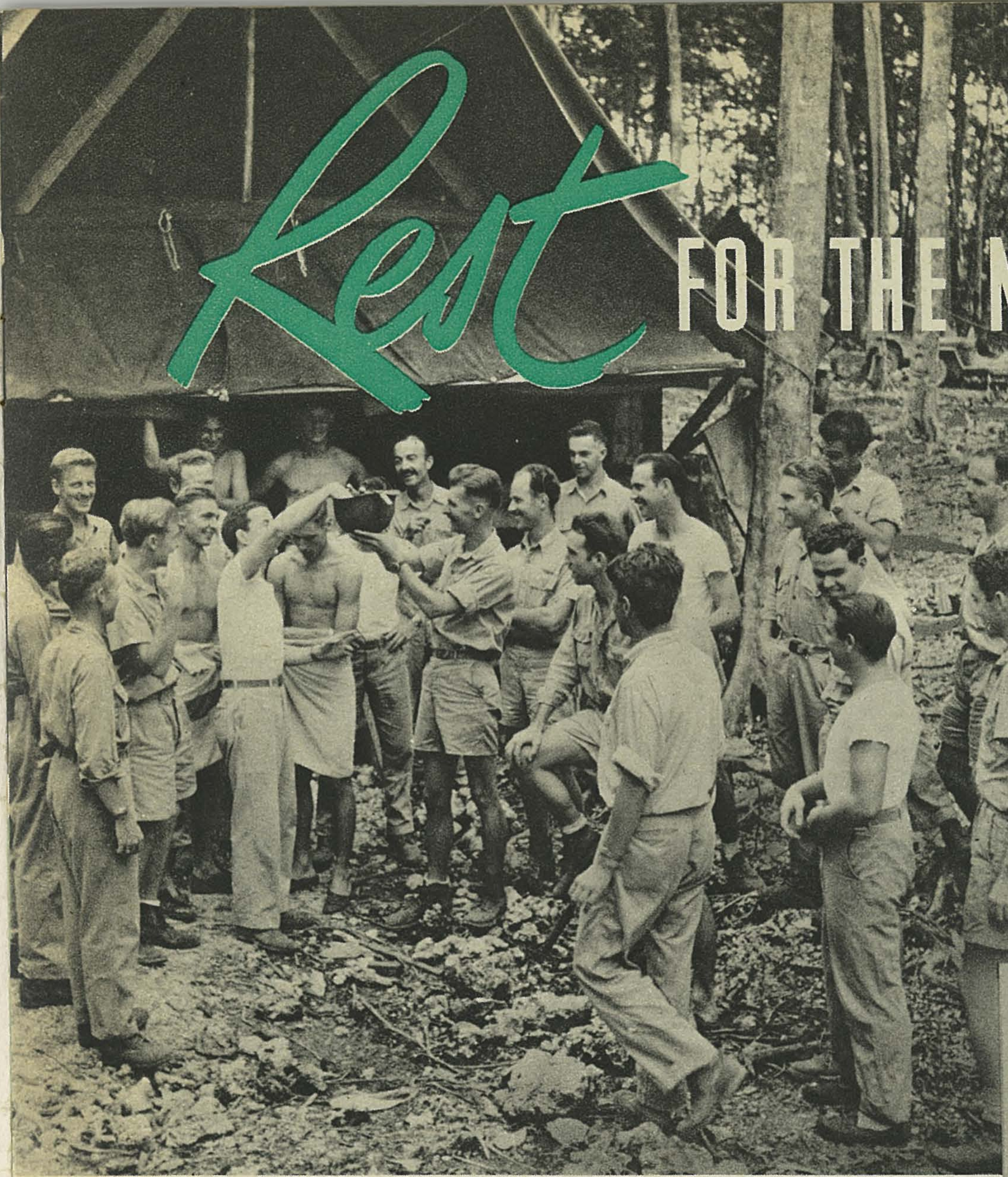
Assigned to various Fleet Air Wings in the Pacific, the PB4Y-2 is demonstrating in important engagements "its proved ability to complete long-range search missions, fight successfully for information and carry out low-altitude bombing attacks against enemy submarines." The words quoted are from a public statement by Rear Admiral DeWitt Clinton Ramsey.

Consolidated Vultee is also producer of three other important Navy planes — the still secret Sea Wolf torpedo bomber (TBY-2); the Coronado (PB2Y-5), now being overhauled to incorporate new power plants and jet take-off apparatus (see page 8); and the famous PBY patrol bomber, recently equipped as the PBY-6A with new turret, heavier armament, higher tail, and auxiliary fuel tanks that increase its range.

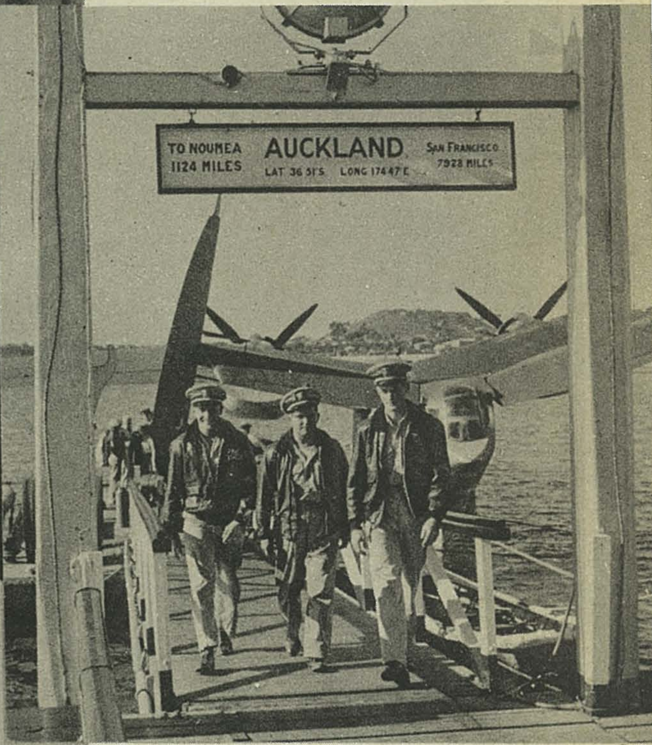
* * *

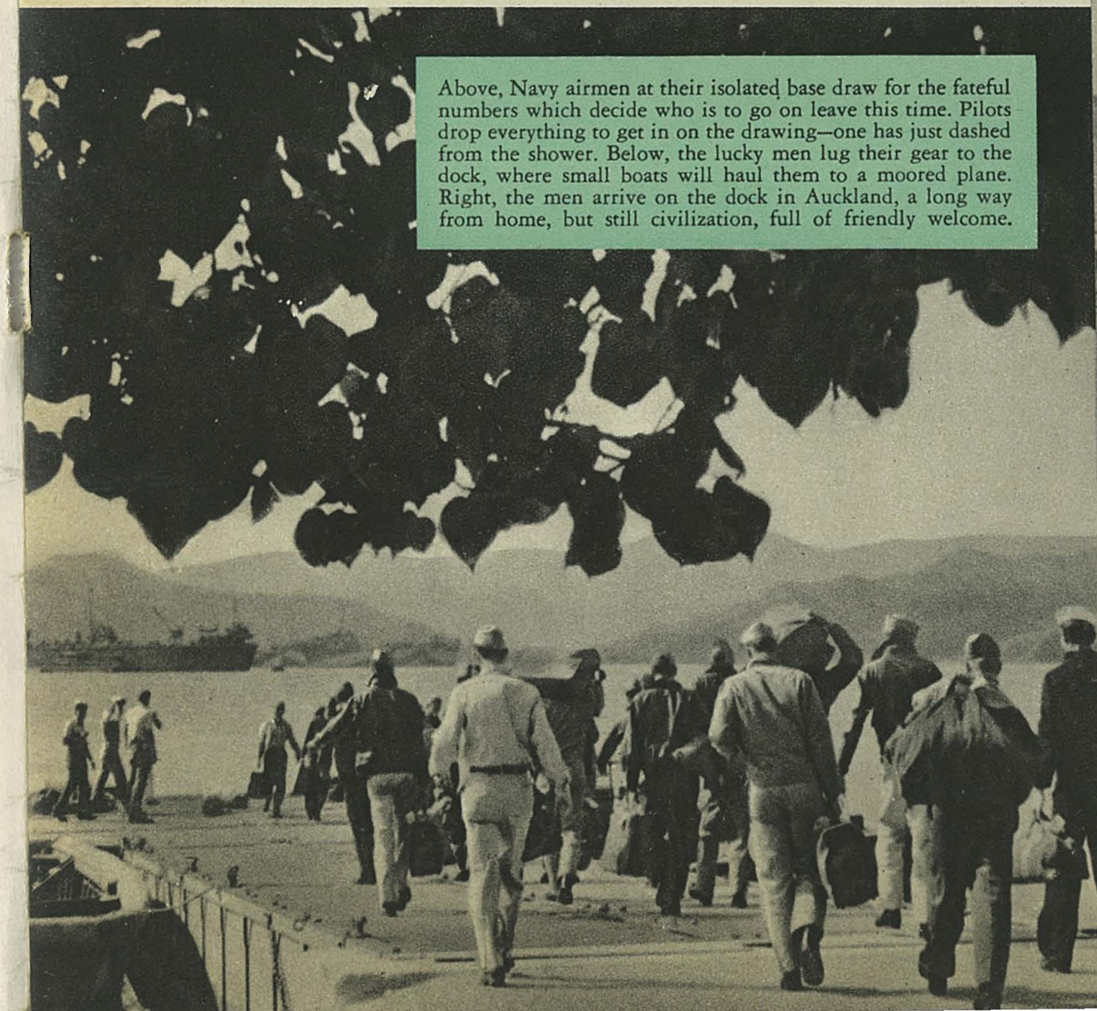
Overdue Acknowledgement: The photograph on Page 4 of the March issue was by Otto Menge, and the kodachrome on Page 5 by Edward Sievers.

Rest FOR THE NAVY'S FLYERS



This is a Privateer pilot in oxygen gear.





Above, Navy airmen at their isolated base draw for the fateful numbers which decide who is to go on leave this time. Pilots drop everything to get in on the drawing—one has just dashed from the shower. Below, the lucky men lug their gear to the dock, where small boats will haul them to a moored plane. Right, the men arrive on the dock in Auckland, a long way from home, but still civilization, full of friendly welcome.

The Navy's airmen work hard, take daring risks, are often the decisive force in our naval victories over the Japs. In return, the Navy takes superb care of its airmen. When fatigued, for instance, and in need of a leave, they can go to rest centers such as you see on the next page.

The Navy makes luxurious ease the watchword in its rest homes for airmen.

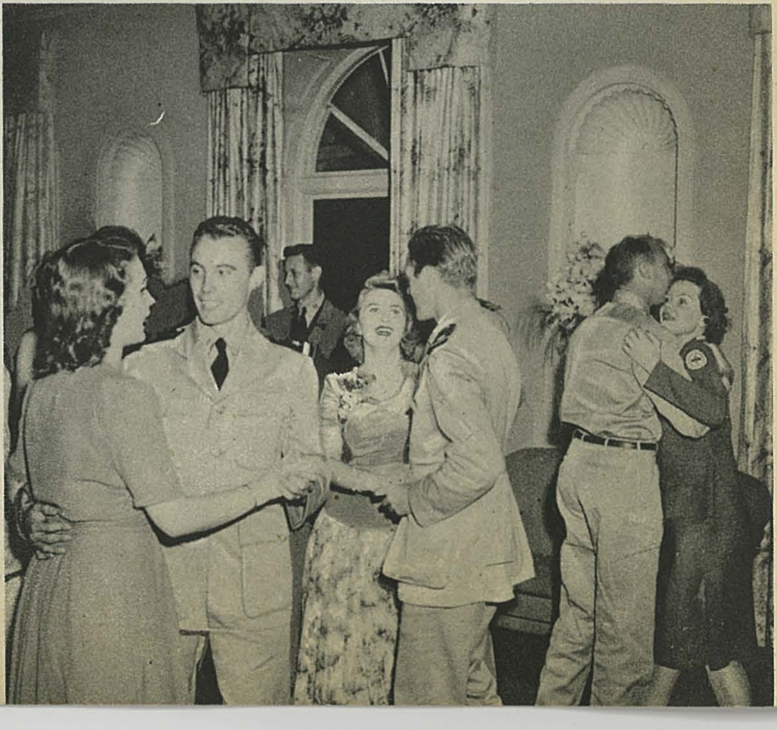
This is not quite typical of all Navy rest homes, but it's what flyers find at Glen Innis, near Auckland.

She's pouring them glasses of cold milk. That's a rare treat for airmen long in the tropics.

The companionship of nice girls is important. The Navy has the assistance of local residents in inviting and chaperoning them. This is a beach party in swimming suits.

They can play games if activity is what they want—or do nothing but lounge in the sunlight.

War has made millions of Americans into good letter writers. Here inspiration flows easily.



The rest leave usually runs from four days to a week at a typical Navy rest home. Then the refreshed men return, others come in rotation.

These airmen on horseback are surveying the beautiful New Zealand landscape from a hilltop near Auckland. It's a magnificent country.

At left is one of the dancing parties that local residents gladly help sponsor.

An airman's nerves get tortured and tense. Here is release. No orders, no musts.

AAF Photo

Two "flights" of Liberators (three planes make a "flight") leave their vapor trails over Europe. Soon, now, they will be on their way to the East.

AT GERMANY'S HEART: What Our

We jeeped along the German roads, Captain John Ashford of San Francisco and I, and read the innumerable signs: *Shoulders Clear to Ditches . . . Road Cleared of Mines to Buildings . . .* or, equally often, *Fields Heavily Mined.*

You generate a fearful respect for these underground death-dealers. If your jeep pauses for a comfort stop you don't step off the hard pan. If you enter a bombed out shelter, you take care to step *over* any obstruction. Your imagination hints of unseen terrors, and your imagination is right.

The mines will be defiling the soil of Europe perhaps for years. Removing them is dangerous business. The French hope to use German prisoners of war for the nasty job.

We were following so close beside our own troops that mines still lay scattered on tops of snowdrifts. "See those gouges in the pine trees?" queried Ashford. Trees lining both sides of the road had been notched and something tied there—something looking like bundles of shotgun shells, with a black umbilical cord attached. "At a touch of a switch those charges would go off," explained Ashford, "and the trees for miles along the road would topple over on the highway, to block our approach."

The charges didn't go off. The hand that was to spark them was stilled, perhaps, when a Liberator bomb paralyzed the whole power house where the current was generated.

We were on our way to one of the new hurry-up air strips that the aviation engineers began laying down in Germany as soon as we had a foothold across the Rhine.

We shall need many of these air strips long after the German surrender. For enough of our air force will stay on guard to assure the maintenance of order in Germany, for a long time to come. And our bombers and transports will have important transport jobs to do for many months. For one thing, demobilization plans call for flying back some 50,000 men monthly to the United States—an extraordinary operation in itself.

By the time you read this you'll doubtless be thinking of organized war in Germany as ancient history. The strategic bombing was already polished off pretty well even before we crossed the Rhine. But we still had vital jobs for Liberators. You remember the old historical drama, where they loaded the family silver in the cannon at the climax and just hurled everything at the enemy? That was our Rhine crossing—we hurled everything. Some 240 Liberators, for instance, were put on the job of supplying paratroopers.

Don't think this was any loss of dignity for a fighting B-24. It was precision bombing extraordinary. Into a narrow slip repre-

Bombing did

By FRED B. BARTON

AAF Photo

Mechanics and ground crews have good quarters in Germany, will have lots of work for awhile.

senting our growing wedge, these Liberators had to deliver all the supplies needed by our paratroopers—ammunition, food, water, weapons. The paratrooper is a superman, understand. But starve him of ammunition or supplies and you may have a man dead and a mission thwarted.

The Liberator pilots assigned to support the paratroopers had for two years been eating flak for breakfast at five to twenty-four thousand feet up in the sky. Now they had an even tougher job—to unload supplies at treetop level. You have to be mighty good to operate a heavy bomber at a hundred feet of altitude, in shotgun range of the whole Nazi Army.

These boys did. The supplies were carried in bundles in the bomb bay of each plane. In some instances they were just tossed out to the troops by hand. One eye witness told me that he saw one crewman lose his footing in the bomb bay and fall out to be instantly killed.

Flying close as swallows, the Liberators carried in six thousand tons of supplies for our own 17th Airborne Division and a British airborne division, and put them down exactly where they had to be. Just a few feet to the right or left could have put them in German hands.

This Liberator flight was one of the really sensational jobs in our Rhine crossing. We lost 24 out of the 240 great machines that did the work; but the result was to give our paratroopers supplies that sustained them until they could make contact with our ground forces—and that contact was absolutely vital to the success of our Rhine crossing.

Not for a long time had any mission cost 10 per cent of the bombers involved. The average of our bombers lost on combat missions in Europe in 1944 was only 2 per cent. It fell below 1 per cent by February of this year—showing the measure of our air conquest of Germany.

And how we did it! I guess it will take more than a generation to rebuild Germany's industrial cities and manufacturing centers—if indeed they are ever to be quite reconstructed.

By middle April of 1945, it was officially estimated that our strategic bombing had cut German gas production down to 4 per cent of its previous norm; steel producing capacity to 8 per cent; hard coal to 1 per cent; coke almost to nothing. Such figures show how completely Germany as an industrial power was wiped out.

That was the meaning of the order issued April 16 by General Carl A. Spaatz, Commander of the U.S. Strategic Air Forces in Europe, saying the strategic air war was ended, and our heavy bombers would hereafter support our ground forces in tactical operations.

Mark April 16, then, as a date that will go down in history as one of the most significant in all wars of modern times—the date when airpower for the first time in the world had destroyed a nation's resources for war.

The pattern of the SAD, or Strategic Air Depot, we've been setting up in Middle Europe, is simple enough. (You pronounce it "deppo," just as you say "marshalling yards" for railroad freight yards, and "vehicles" for trucks.) It is literally something on wheels that can be quickly dismantled, pushed up closer to a scene of operations, and reassembled. A hangar goes up almost overnight, with a roof of canvas like a circus tent. The control tower will contain a million dollars worth of equipment—but it's probably a pineboard shack made out of airplane packing cases.

A portable power plant generates electricity for the control tower's telephone and lights, for the field switchboard, for the miraculous teletypewriters which link all our European airbases into a unit. These teletypewriters flash last minute weather reports to a dozen airbases at once. They report each night the air crews that made land at some base, though they failed to get home—so their buddies needn't worry over them. These scattered airstrips make convenient landing spots that have saved many a crew in a flak-battered Liberator that could not have made the trip back to its own base.

The airstrip is laid down with equipment

AAF Photo

Laying down an airstrip in Germany: "We shall need many of these long after the surrender."

partly flown in by plane, partly pushed in by road. Surrounding it is a camp for personnel that mushrooms in and out of tents. And some building in a half-wrecked town nearby may be taken over for barracks.

Miracles of engineering often go on in the Strategic Air Depots. Damaged planes are pulled apart and rebuilt in record time. Sound parts from wrecked planes are removed to make replacements for other planes—a practice called "cannibalizing." The Eighth Air Force boasts, for instance, that no replacement wings for Liberators have ever been flown or shipped from the States to the European Theatre (ETO). Wings from a Liberator fuselage no longer air worthy are removed and treasured like a family heirloom, until they can be fitted on some other B-24 that needs them.

In five days I visited several of these hurry up airstrips in France and Germany. Speedy though their construction is, there is no compromise with engineering thoroughness. To prevent airplanes from sinking into the mud the engineers lay down long rolls of SMT—i.e., square-meshed track. On top of this—if the soil is soft—may go whole acres of PSP—pierced steel planking. On muddy German farms straw is sometimes used between the two layers as a drainage cushion. Overall goes sand.

Ashford told me that an average bomber runway contains enough metal to build 36 American locomotives, while the brick, gravel and cement used would form the bulk of two Washington monuments. In Germany we usually get any needed fill and masonry supplies by scooping up the shattered debris of nearby towns and cities. Sometimes an entire village is razed to clear a needed site. Enough gas is needed by the machines used for grading to drive an auto around the equator 20 times. "All told," said the statistically minded Ashford, "the entire cargo space of 4 or 5 Liberty ships is needed to transport a single airstrip from the United States to Europe."

The Liberator men you see around these airstrips are tough. I have seen B-24 pilots in Iceland, England, and the ETO—meaning European Theatre of Operations. I've lived with others in India, Burma and China.

In the sunny part of the world our Liberator men take on a softness of skin and a gentleness of manner that seem to come from the climate. Here in the ETO, where life is rugged and winters are long, the big bomber men are tough, rough and gruff. They like to admit it. Sometimes they don't shave for days. The bulky clothing they wear doesn't lighten their mien.

The pilots speak lightly of the risks they ran. "I've seen planes fly home punched as full of holes as a sieve," says a young fellow, comfortably upholstered with a sheep-lined jacket and a gay neckerchief made of white parachute silk. "But now and then you saw one blow up. Stands to reason, if you hit them in the right place, they'd puff."

Another says, "The big cities weren't our worst targets. Some of the little places gave us lots more flak than the big ones did."

PERHAPS you will understand that our men do not spare much sympathy for the Germans.

"I used to feel sorry for them when we had to commandeer a house for headquarters, but not any more," one soldier told me. He had seen his mates shot down beside him. "I'll order any family out on an hour's notice now, even if they have to move into a field."

Eisenhower's policy of "no fraternizing with the enemy" has teeth in it, as some officers and men have discovered. There is one notable case of a warrant officer who was fined $390 for visiting a German girl in her home. For the GI's the fine is $65, so they say "that is the $65 question" when you ask them how they like the Heinies.

Our military police operate openly and without the bullying made famous by the Gestapo, but they are definitely tough. A young MP lieutenant from Palm Beach

German children look on while engineers bring up fill, in the form of rubble, for an airstrip.

AAF Photo

ancher frißt wie's liebe Vieh
und mancher mit Bedacht-
das erſte das bekommt oft nie
das zweite ſatter macht!

AAF Photo

Air Force men enjoying chow in comfortable quarters requisitioned for their use in Germany: "Food is always good, and conversation original."

told me: "We search these German homes, and if we find any U. S. Army goods of any kind, we apprehend the goods and perhaps take the individual into safe keeping. Also we constantly pick up bicycles being ridden on the main highways and put them in the pound. If a truck convoy is moving along, as it always is, you can't be bothered by some Nazi civilian getting in the way with his market-basket on his bicycle."

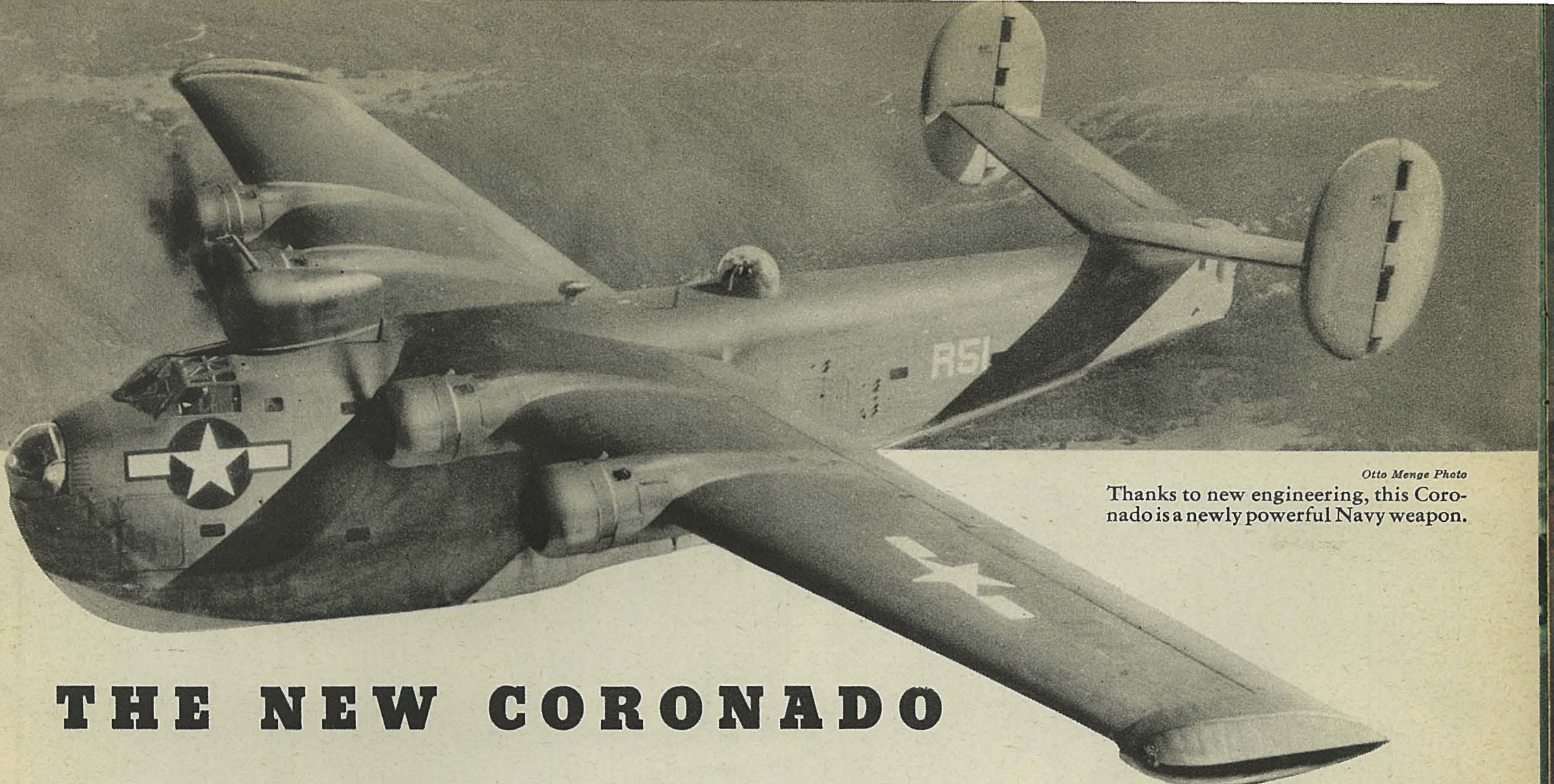
The damage has been thorough. The aerial bombs did as much damage to native houses and buildings as did our guns and men. When you visit a German city—Aachen or Julich will serve as typical examples—you are not sure how much of the damage has been done by our side and how much by the Germans themselves.

Shortly before his untimely death President Roosevelt authorized the War Department to appoint a special bombing commission to appraise dispassionately the effect of our strategic bombing on the German economy. Until that report is compiled, together with other official reports by the Air Forces, we shall have no definitive summary of what our magnificent airmen accomplished in fulfilling the task our nation set them. But the remnants of the industrial Germany I have seen suggest that no words in any report can ever adequately picture the hell our airmen poured upon the Nazi machine and its operators.

German industrialists and Generals alike have testified that it was our bombing which destroyed them, beginning with 1943. Their testimony is a great tribute to the planning of our air forces and of the indomitable General Arnold, who battled the sceptics unable to understand what this new weapon could do, and built the greatest air force in the world.

Report says that many of our airmen will be leaving for the Pacific soon now. They'll be glad to leave the German scene. They don't like Germany. "Too beat up," one fellow described it to me. At that, they have managed temporarily to make themselves fairly comfortable. One outfit of aviation engineers I met had actually managed to acquire a new Steinway grand; it was kept moving with them, along with the crates of welding rods and other reserve equipment, the portable generator and wiring for the electric lights. They even offered me a hot shower.

Food is always good—and conversation over it is always original and friendly. Said one airman over a fine piece of beef, "For my money Paris is the world's most beautiful city." Then spoke a quiet voice from the corner. "Guess you've never seen Cedar Rapids," it said.



Otto Menge Photo

Thanks to new engineering, this Coronado is a newly powerful Navy weapon.

THE NEW CORONADO

At an age when most military aircraft have reached obsolescence, the Navy's four engine Coronado flying boats are being made into virtually new airplanes. Given complete overhauls, new power plants, jet take-off apparatus, and the latest radio and detection installations, the Coronados leave Consolidated Vultee's San Diego plant as up-to-date military planes, with the Navy designation PB2Y-5.

As the first of the Consolidated Vultee flying boats to have jet propulsion for assistance in take-offs, the Coronado "5s" are better airplanes than when originally delivered in 1942 and 1943.

The jet propulsion equipment shortens take-off runs and permits take-offs from rough water. There is a new type tail turret, with more effective waist guns. More space is provided on the flight deck because of the area required for detection equipment. Speed and range are increased. A new and larger auxiliary power unit is installed. The inboard engines are equipped with four-bladed propellers, with reversible blades that help improve control in taxiing. The outboard engines have three-bladed propellers. Fuel and electrical systems are completely modernized during the alterations.

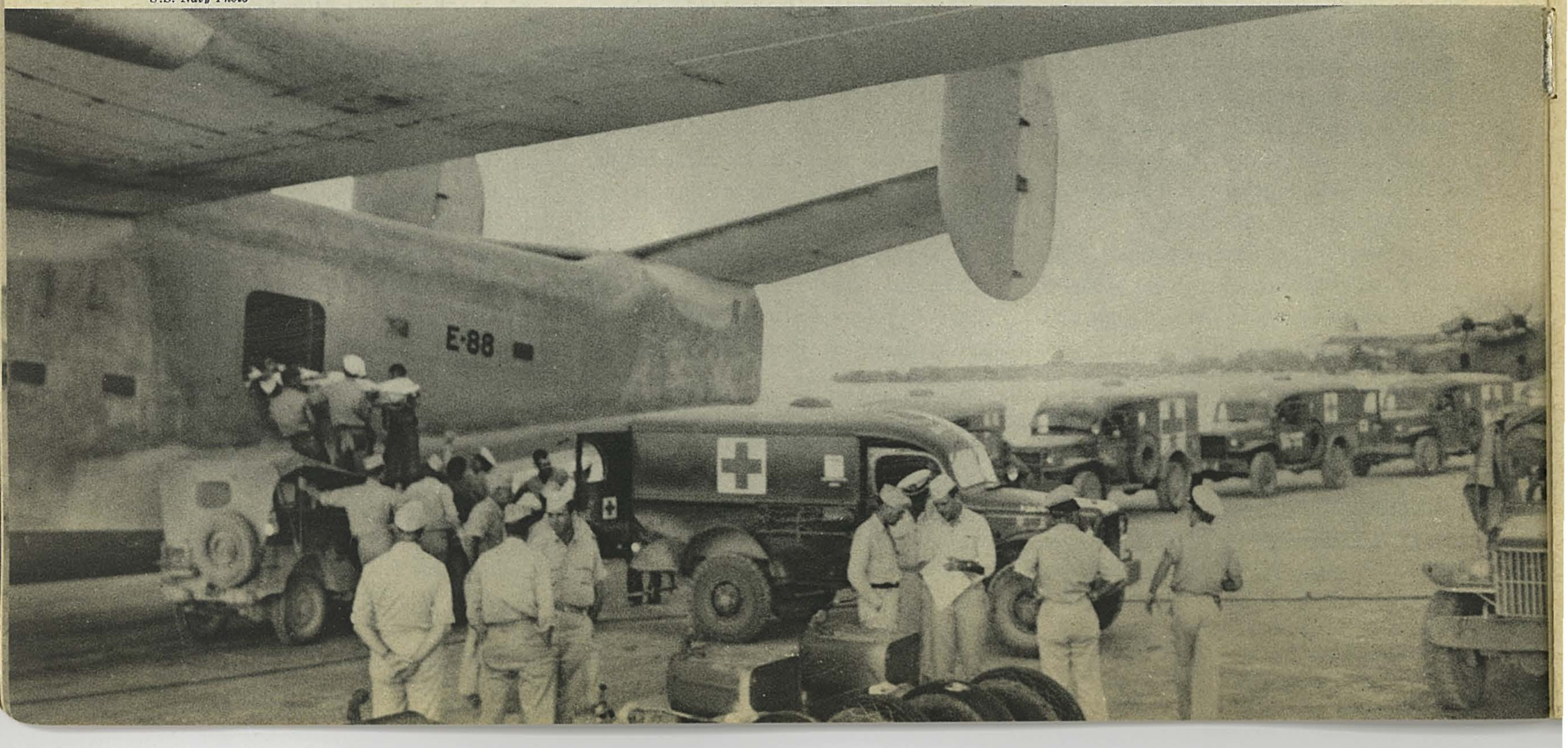
Armament includes three turrets, each with two .50 caliber machine guns, and two continuous-feed side guns. Bombs are carried in the wings, and aerial torpedoes ride beneath the two outboard engines.

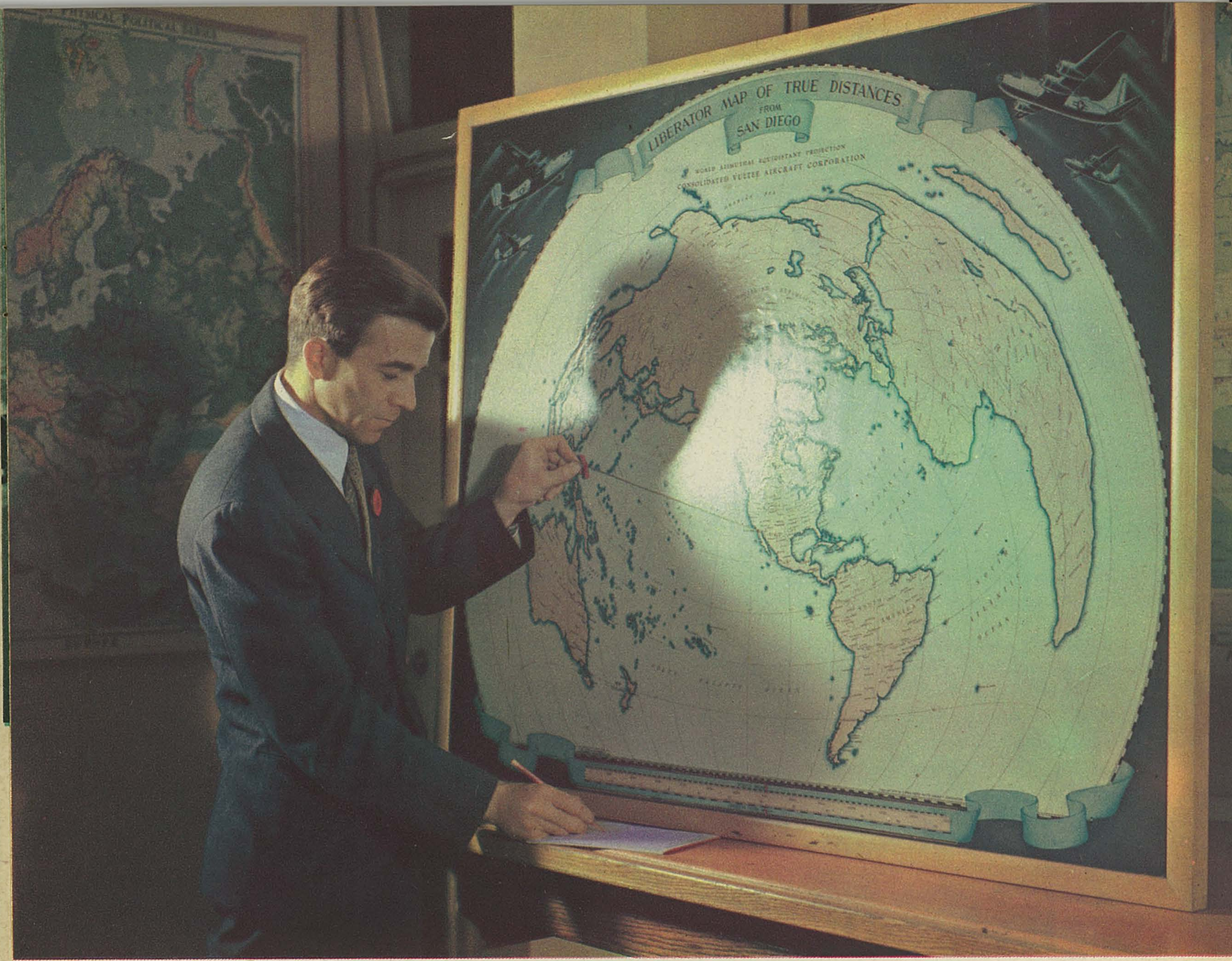
Although the Coronados are old in service, only a few of them have been lost. Practically all of the PB2Y-3s built in 1942, 1943 and 1944 are still in service or have been brought back for modification. The cargo-transport versions of the same plane are PB2Y-3Rs, which were delivered to the Navy in 1943 and 1944 to help meet an acute supply problem in the Pacific.

Not all of the Coronado "3s" are going back to the Pacific war as combat planes. A few are being made into hospital ships, and designated PB2Y-5H by the Navy. These planes go out without armament.

These are Iwo Jima casualties, secured on stretchers, being carefully loaded by the Navy for flight to a base hospital in a Coronado PB2Y-5H.

U.S. Navy Photo




LIBERATOR MAP OF TRUE DISTANCES
FROM
SAN DIEGO
WORLD AZIMUTHAL EQUIDISTANT PROJECTION
CONSOLIDATED VULTEE AIRCRAFT CORPORATION

Kodachrome by Edward Sievers

Map FOR AN AIR WORLD

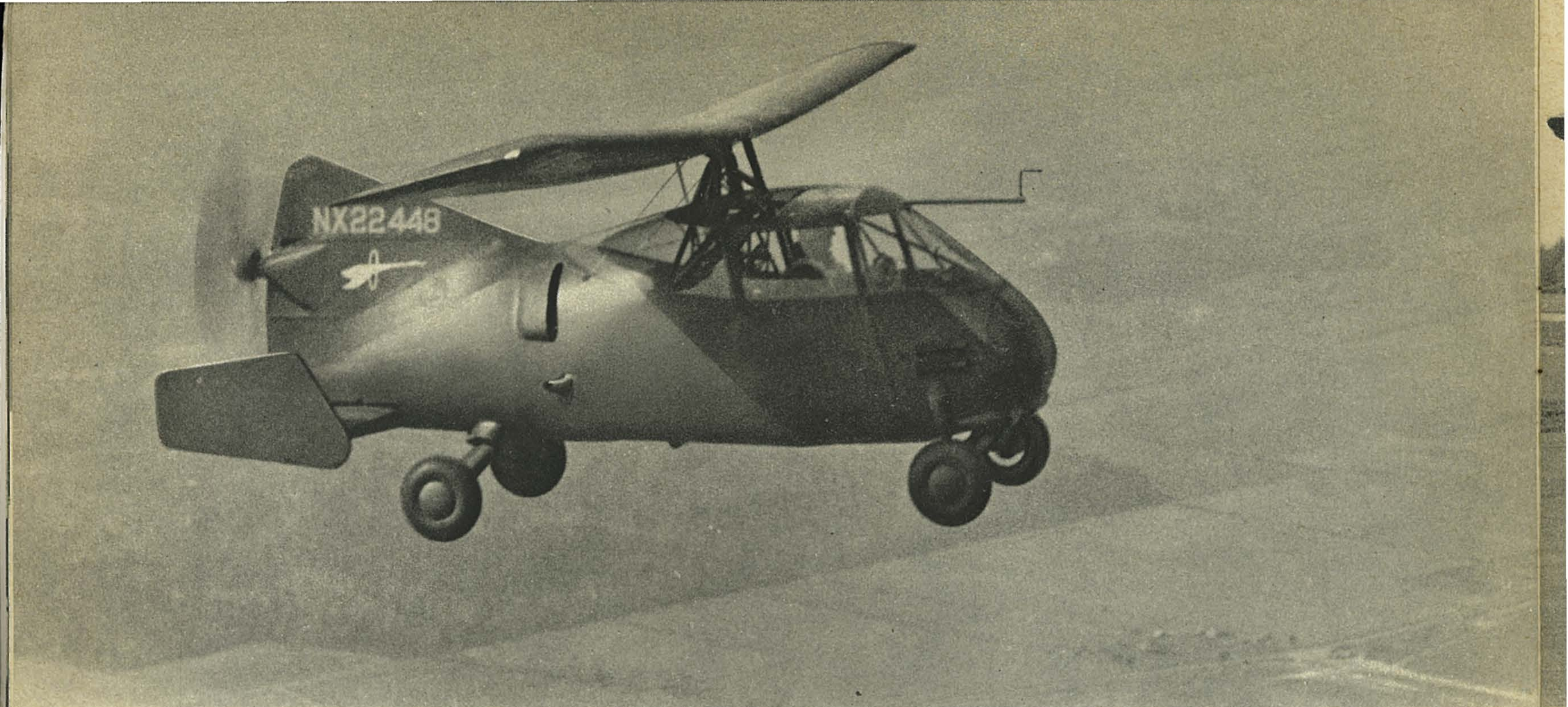
HERE is a map with a rather frightening name—"Azimuthal Equidistant" projection. But it is the kind of map that will become familiar to millions in this air age. It was designed for the San Diego plant of Consolidated Vultee by the Company's Chief Navigator, Charles Mattingly.

In simple language, Azimuthal Equidistant means a map centered on one definite spot on the globe, from which the distance to any other point can be accurately measured. On such a map, the straight line connecting the center spot with any other point on earth is really a "great circle," which is the shortest distance between these two points.

This Azimuthal map is centered at San Diego.

At the bottom the map has an automatic distance and time scale. This scale gives a pointer reading when you pull out the cord, centered at San Diego, and stretch it to the geographic point from which you wish to know intervening distance. A simple mechanism on the back slides the pointers in true co-relation to the straight distance represented by the projected string. Not only does the map give true "great circle" mileage, but also gives a flying time reading. On the Mattingly projection, this figure is given in today's Liberator transport flying time for a given mileage.

More than 3,000 calculations are required to construct such a map for any given central point. Mattingly believes that soon maps of this kind will be seen on walls of airport waiting rooms, in school classes, in libraries, and in executive offices all over the world.



A plane equipped with the Spratt controllable wing flies horizontally—i.e., parallel with the ground—all the time. This is such a plane.

TESTING

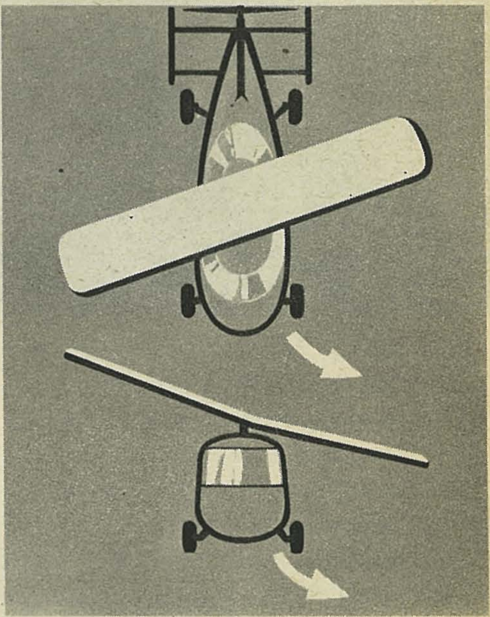
For almost half a century the Spratt family of Coatesville, Pa., have pursued an idea. They believe that flying can be greatly simplified by giving planes a controllable wing, instead of conventional ailerons and rudders. Dr. George Spratt was so convinced of this, 43 years ago, that he parted company with the Wright brothers because they insisted on using ailerons and rudders to maneuver aircraft. Today his son, George, Jr., is design specialist for the Stout Research Division of Consolidated Vultee at Dearborn, Michigan — and the younger Spratt is still working on the revolutionary method of airplane control which his father first advocated. He believes the controllable wing will give the airplane control features approaching the automobile controls in simplicity.

Announcement that Spratt's controllable wing is now being flight-tested by Consolidated Vultee came recently from I. M. Laddon, executive vice president. The initial test flight was made in January of this year at Elizabeth City, N. C., where Consolidated Vultee has one of its plants. The site of the take-off, interestingly enough, was only a short distance away from the village of Kitty Hawk, where the elder Spratt once championed his idea to the Wright brothers before they succeeded in their first powered flight from the top of Kill Devil Hill.

During the first test flight of the wing at Elizabeth City, the curious craft equipped with it remained in the air for 12½ minutes and reached an altitude of 1,000 feet. Subsequent test flights resulted in the plane's reaching an altitude of 6,000 feet, with no indication that this is its ceiling.

Conservative engineers are inclined to be wary of claims and chary of promised production. Hence they are making no claims that in the Spratt wing they have the key to a revolution in aircraft design. But some of the advantages of the new wing appear outstanding, in their promise of greater safety and easier handling of small aircraft.

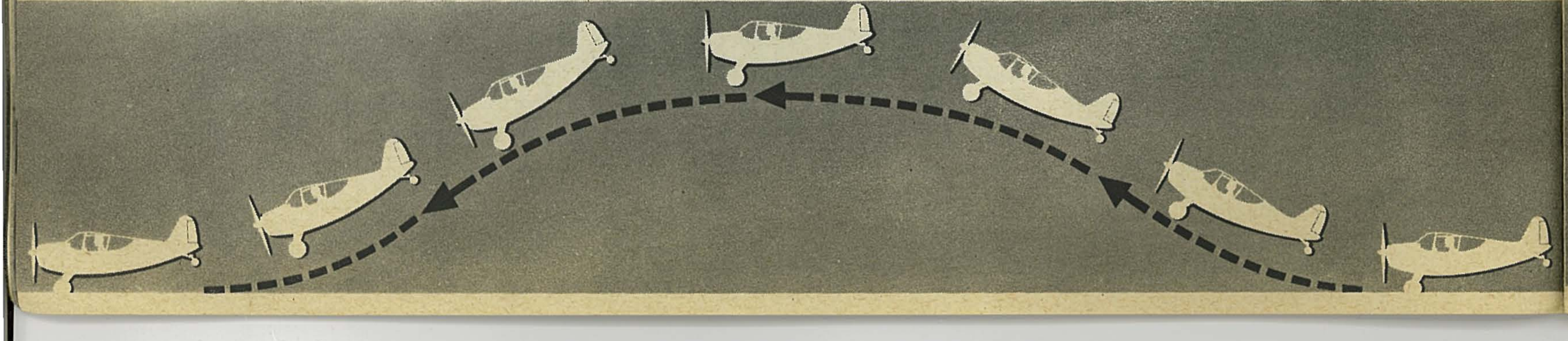
The Spratt wing in its present form, for instance, offers control features approaching conventional automobile controls in their simplicity. There is a foot throttle for controlling engine speeds in take-offs and landings, and a lever comparable to an automobile gear shift for adjusting wing incidence and engine speed for cruising, climbing, and descending flight. An automobile type steering wheel mounted upon a fixed support provides directional control for turns.

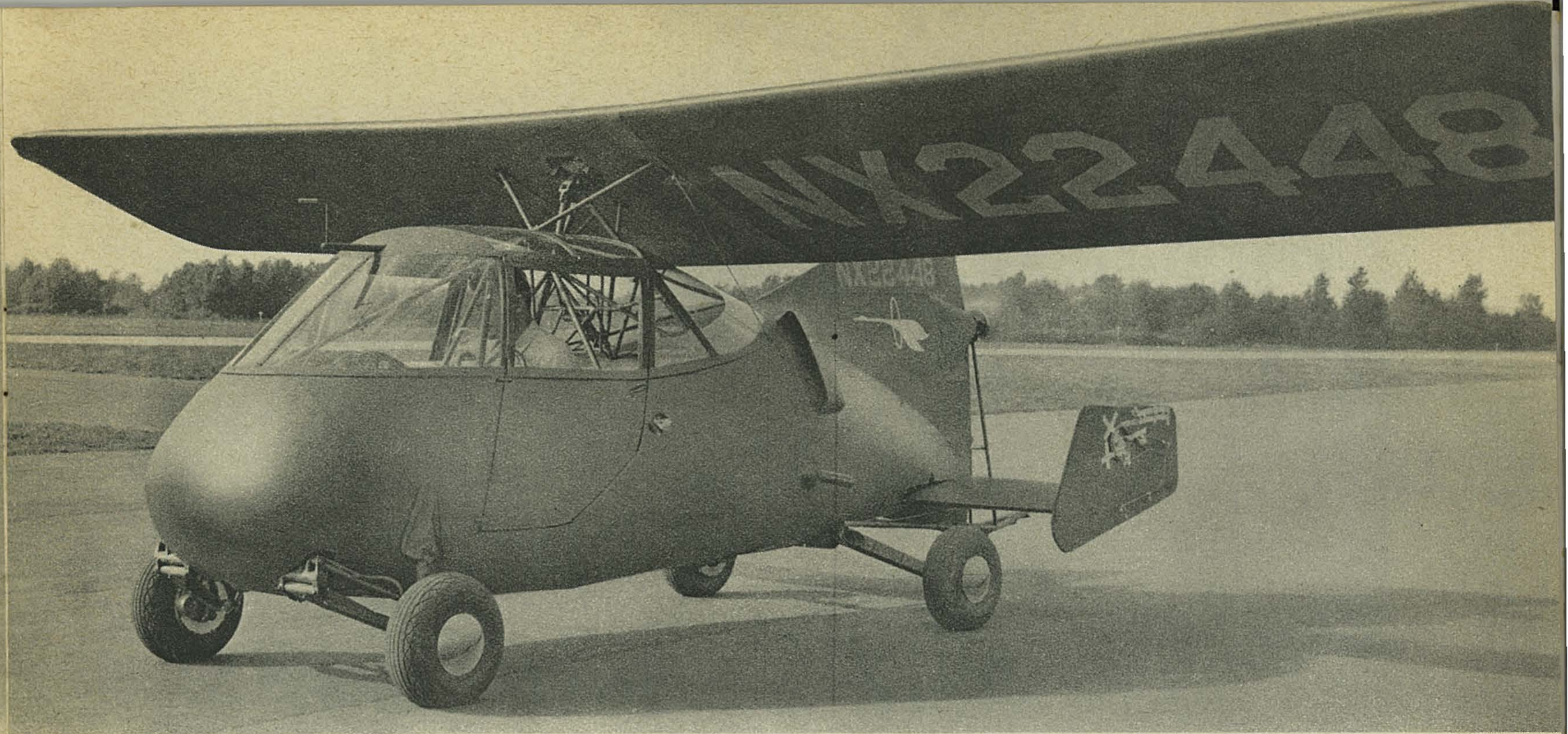


This diagrams the wings in position for turning left. For right turn, reverse procedure.

The wing is made "controllable" by

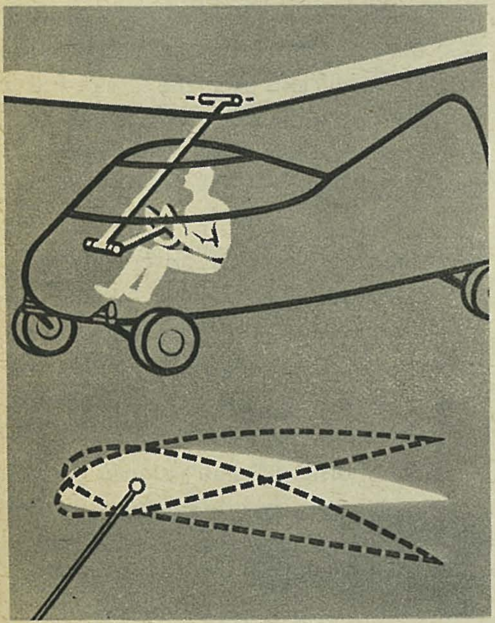
This shows a conventional type plane in take-off and landing. The entire plane must change its angle of inclination, to change angle of the wing.





This close-up of the plane on the ground gives a view of the operator at the automobile type wheel which steers the plane. (See diagram below.)

THE CONTROLLABLE WING



The wing is tilted the desired amount by moving the control wheel, and plane stays level.

mounting it on a bearing that permits movement about two different axes: One axis provides directional control, and the other provides longitudinal control. When perfected it may eliminate the necessity of ailerons, elevators and rudders on small aircraft.

The experimental wing is 26½ feet in length. The method of wing mounting to the fuselage is such that the wing takes the entire shock from rough air, while the fuselage remains in a static position. Spratt declares that, relative to control forces, the wing is stable and virtually stallproof and spinproof. "It would take almost superhuman effort to put a controllable wing into a spin," he asserts.

Dr. Spratt, designer of the controllable wing, died in 1934 after devoting most of his life to experiments with aeronautical design. He was one of the first builders of a wind tunnel for testing design. He came to Kitty Hawk in 1901, and again in 1902 when the Wrights were experimenting with kites and gliders.

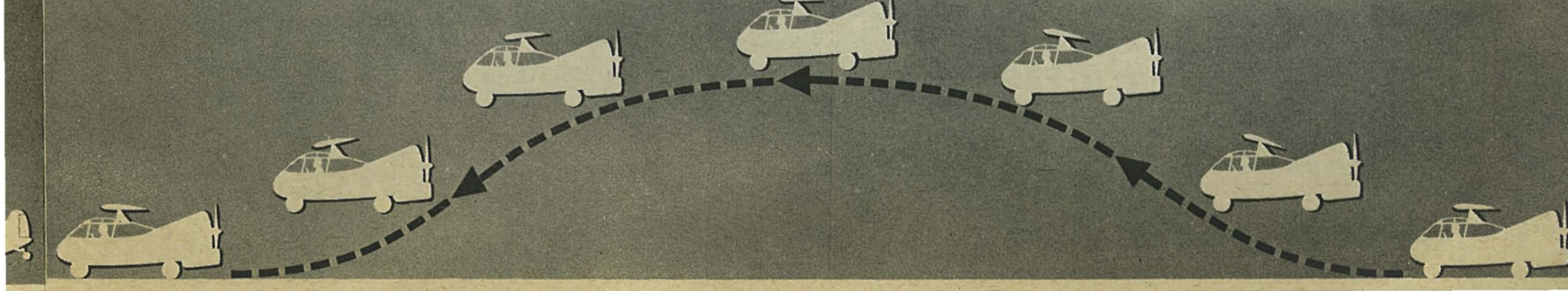
After his father's death, George Spratt continued with experiments on the controllable wing and had logged 100 hours of secret flying time with the wing before his friends knew of the accomplishment. Spratt cannot fly a conventional type of aircraft.

The younger Spratt built his first plane in 1918, and just when it was ready to take to the air a thunder and wind storm blew it into a mass of twisted wreckage. Ten years later he built a glider that flew successfully from water, but the depression halted his experiments.

By 1935 he was back at his experimental laboratory and flew his powered controllable wing 35 hours without mishap. Two years later he completed a flying boat under his controllable wing, but it was 1940 before he got the boat flying to his satisfaction. In the summer of 1941 he completed his 100 hours of secret flight.

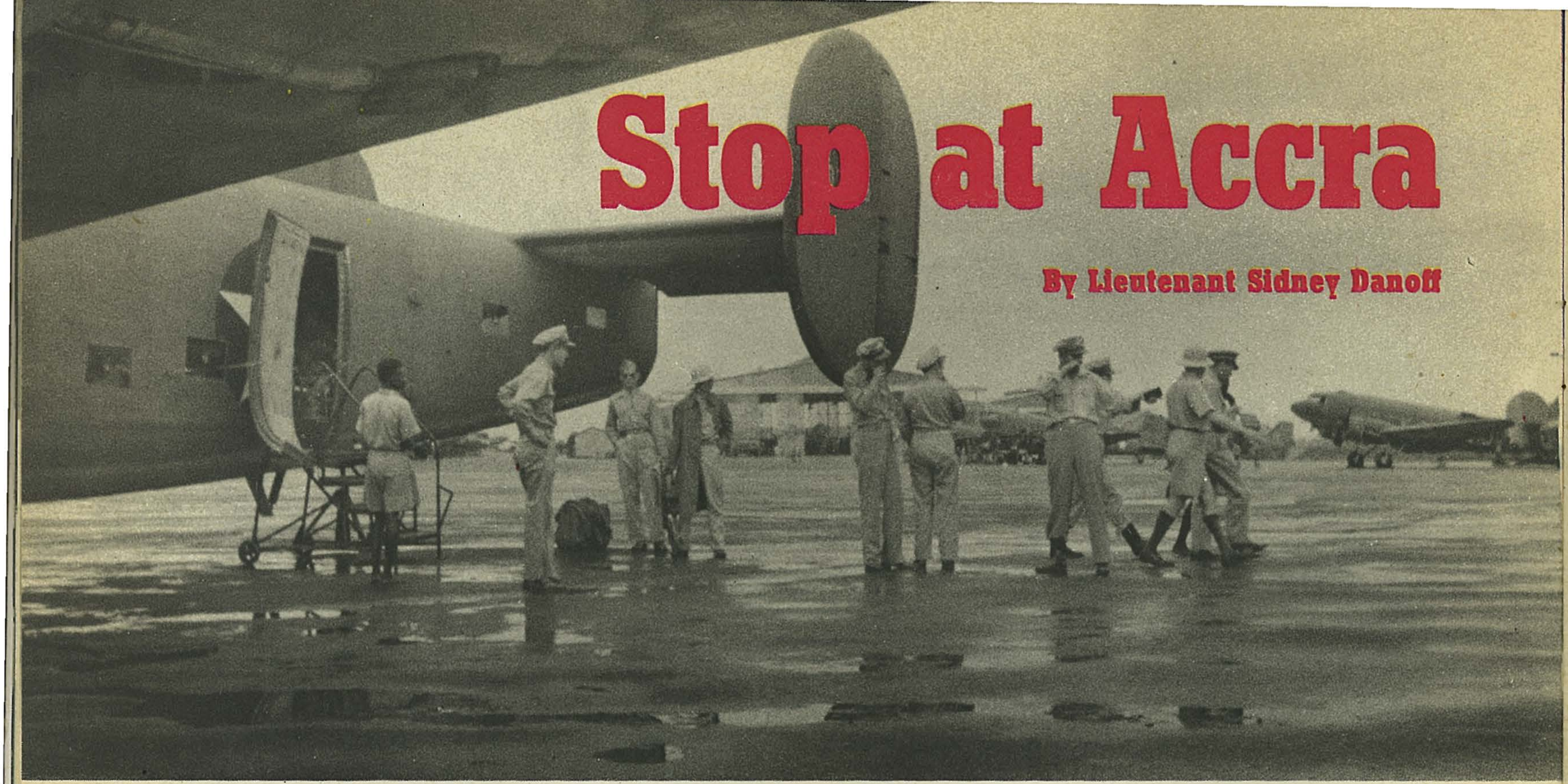
Spratt joined Consolidated Vultee at the Stout Research Division in 1944, and experiments in the development of his wing design, under auspices that give it the benefit of every engineering resource, have been proceeding ever since.

This shows take-off and landing of plane equipped with controllable wing. The wing is mounted on a bearing that permits movement about two axes.



Stop at Accra

By Lieutenant Sidney Danoff



Dmitri Photo

Liberator Express at Accra unloading passengers: "I got out with the crowd, conscious of a sudden feeling of gratitude to the monster."

The Air Transport Command celebrates its 4th birthday on May 29th. Lieutenant Danoff met it for the first time when he flew to Accra. And he was surprised.

Last year ATC, through its nine foreign divisions, furnished transient quarters to some 5 million persons, at various stops on its routes; fed them 15 million meals; provided another two million meals as lunches, to still hunger on long hops over oceans and continents.

Its chain of hotel accommodations at the various bases is called the "De Gink" system, for reasons already lost in soldier lore. I knew little enough about any of the system when I started out, with Africa as my final destination; I learned later that Accra is typical of the way our Air Forces have carried American order, ingenuity and invention to even the most outlandish corners of the map.

I got there with no great expectations. No one had told me. I only knew this was to be my new post. Our C-87 cavorted its bulky frame into a sliding bank, and a few of my internal organs collided belligerently.

Then the mammoth wheels of our Liberator grabbed at the asphalt, we rolled once more across the earth, and the hatch was thrown open. A clean-cut 2nd Lieutenant stepped through the opening with a friendly grin and rattled off his do's and don'ts. I got out with the crowd, and looked back at the plane, conscious of a sudden feeling of gratitude for a monster that had raced us across the Atlantic with only one perfunctory stop at Ascension for a breather.

The scene around us was impressive. The operations building lay snugly against the edge of the runway and looked like the efficient nucleus of a modern, commercial airport. I glanced casually at our guide, expecting commands, but he spoke to all and sundry as though they were friendly travellers and temporary guests. We were escorted promptly to the Transient Service Building, were certified as to our immunization shots, and just as promptly assigned quarters. In the same building, I found an arm of the Finance Office quietly dispensing foreign exchange, and got a welcome addition to my short-snorter. I learned later about the ATC world wide banking system. At one base alone, it keeps more than $5,000,000 on hand, in 36 currencies, all the time.

An orderly line of native baggage boys attached itself to our disorderly line of transients and we marched toward our quarters, stopping at the baggage room en route. Here, neatly stacked in front of us, each found his heavy luggage, available for rummaging and guarded zealously by a brawny native guard.

We reached our quarters, found them glistening from the work of eager houseboys, and cleaned up hastily for lunch. In the Transient Mess the efficiency was obvious; the food was excellent — fresh vegetables and delicious beef; the service was a startling deviation from some I had seen in Army procedure; and the price was twenty-five cents.

The bulletin board was advertising "Mr. Skeffington" at the "Rocsy." I planned myself a quiet movie; took my first atabrine tablet after supper; enjoyed the show; and then crawled under my mosquito netting, for a dreamless sleep.

In the morning I was assigned permanent quarters, and heaped my luggage onto the shoulders of a grinning native and left for camp. The Officer's Quarters turned out to be comfortable, well furnished, and completely convenient. Each room, with accom-

ATC Kodachrome from Miami Army Air Field

At right, old Liberator "258", a veteran of the Fireball Line operated by ATC via Accra between Miami and India, is serviced at Miami's Army Air Field. This part of ATC operations was inaugurated at Miami in November 1943 by Lieut. Col. Joseph C. Mackey, known to his men as a "pilot's pilot." His crews make the round trip to India, 28,000 miles, in eight days. The Fireball Line has flown more than ten million miles without injury to a single passenger, has spanned the Atlantic Ocean over 2,000 times.

The Fireball Line carries fast freight as well as passengers. According to Brig. Gen. Robert E. Nowland, Commanding General of the ATC's Ferrying Division, Fireball Liberators have flown thousands of pounds of important supplies to India as materiel required for our present bombing of the Japanese Empire.

Dmitri Kodachrome

"These Gold Coast natives speak a halting English, learn rapidly, serve perfectly."

modations for two, is meticulously serviced by a trained, English speaking house-boy. By arrangement the same boy takes care of your laundry, and will return it in 24 hours.

In the course of the next two weeks, I met a galaxy of officers, enlisted men, British civilians, Red Cross officials, and an affable, well liked Chaplain. The more I talked, saw and discovered, the more enthusiastic I got about ATC.

As a guess, I'd say that 80 per cent of the American public would scoff at any homecoming soldier's report of meeting an air base in Africa offering a lovely beach for surf-boarding; a huge theatre with a spaciously built stage; a well-stocked library; a post-exchange boasting everything from silk stockings and hairpins to a fine selection of jewelry and clothing; an excellent tailor-shop housing approximately eighteen qualified needle workers. But such facilities are exactly what you find at Accra.

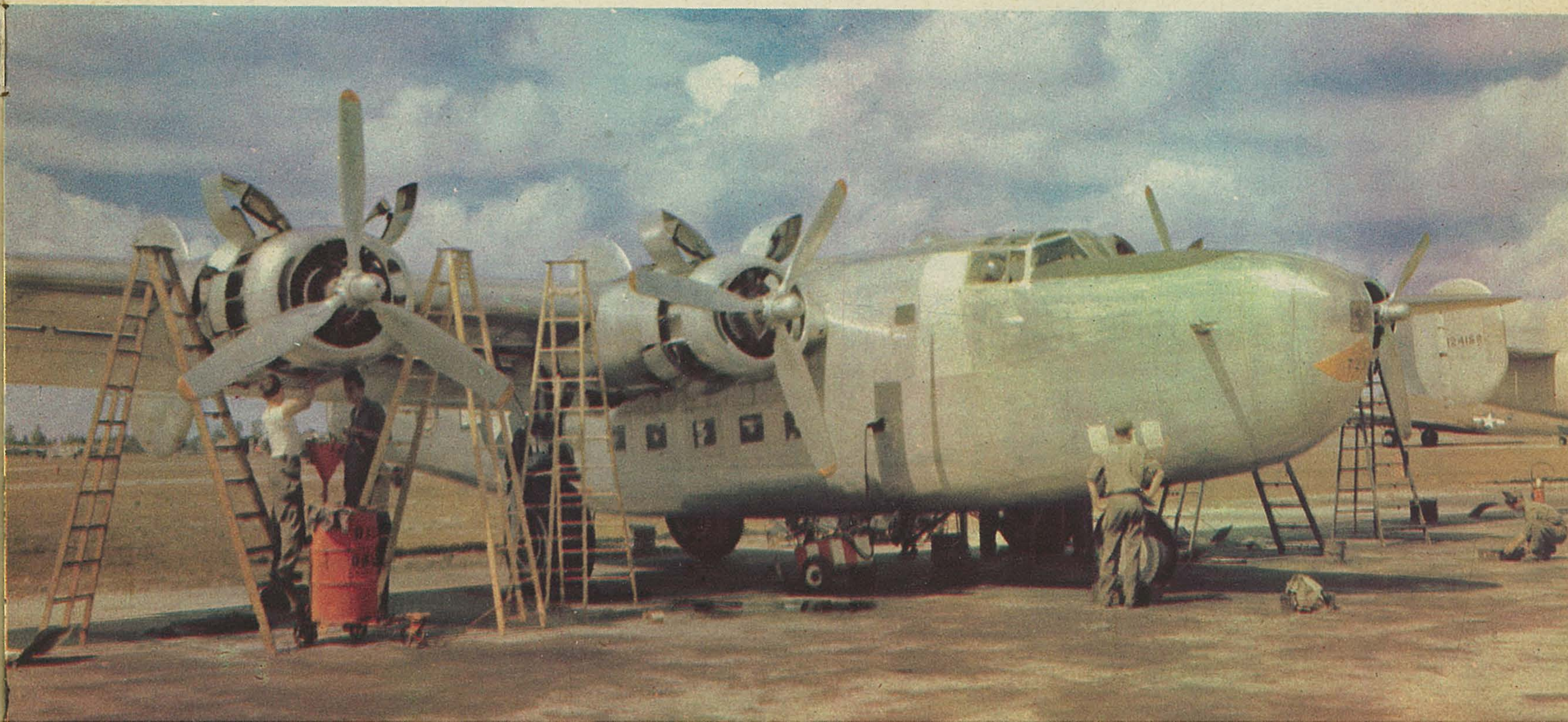
The Gold Coast, which originally attracted the white man for its gold, and later because of the wealth it offered in the form of slaves, has long been a cross-roads. The earliest authenticated visit seems to have been made by Portuguese sailors in the year 1471.

Today the administration is under the control of a Governor and Commander-in-Chief, who is responsible to the Secretary of State for the British Colonies. A population tally, taken in 1938, totalled 3,789,909. Accra, the capital city, lying on the lip of the Atlantic, was picked originally by Pan-American Airways, Ltd., as an ideal base on the route of Middle East and Southern Europe traffic.

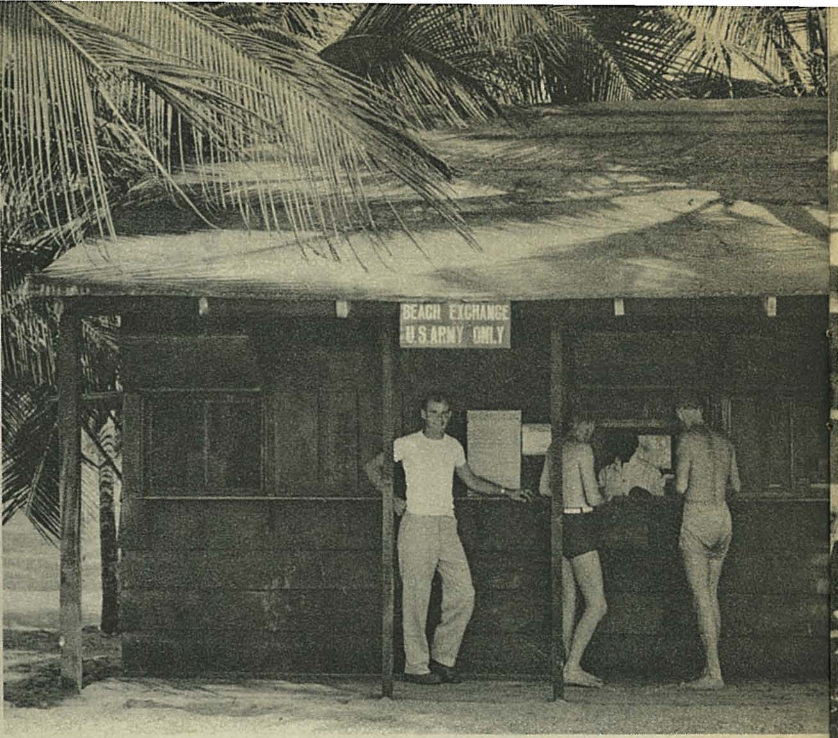
Despite some centuries of trading with Europeans, the country's natural wealth is almost untouched. It is fantastic to see beautifully grained solid mahogany so abundant that it is commonly used to make dust scoops, to patch ramshackle buildings, to build latrine shelters. Gold is still available. As late as 1938, the gold exports from this economic wonderland approximated at £4,800,000, or some $20,000,000. Smaller scale operations have produced manganese ore, rubber (raw), bananas, kola nuts, diamonds, cocoa, copra, palm oil, cattle hides, and lime products. Most of the mining operations in the country are carried out by British companies under Europeans' supervision with African labor.

A number of GIs now listen wistfully to hopeless offers by Britons of three to four thousand dollars for anything from a '38 to a '41 Chevrolet. It is natural to assume that war scarcity of automobiles is the basis of these extravagantly proferred sums. But the wealth in the hands of those who have seen the economic possibilities here and are developing them is also responsible. The effect of the new air age, in enhancing Accra's world-importance, can only be to increase that wealth.

The American Air Forces, through ATC, occupied the old Pan-American station early in the summer of 1942. George Kraigher, Operation Manager for Pan-American, was commissioned Lieutenant Colonel. On August 31 of the same year, the Accra Army Air Base was activated and its command assumed by Colonel



The main Post Exchange sells almost anything a soldier needs to buy.



This PX branch at the Accra beach provides refreshments for swimmers.

Charles D. McAllister. Almost simultaneously, Wideawake Field on Ascension Island was opened in August, 1942.

With this stepping stone at Ascension completed, Accra immediately became a base of global importance.

A staggering number of American military personnel pass through Accra as ATC transients steadily—and ATC gives them all a feeling that this is their America. Here in Africa, they can stroll along a palm lined beach that rivals sections of Daytona and Miami; here they can join beach clad couples, soldiers and Wacs; here they can enjoy lolling, surfing, cold coca-colas, fruit juices and toddy.

Nearby native fishermen offer local color as an eager gallery of observers applaud their net-hauling, while native women haggle ferociously over the catch, and suckling infants strapped to broad backs peer naively at rouged lips and two-piece swim suits.

The beach, one of the major spots of recreation and entertainment, is flanked by two fine theatres, called "The Bushtown" and "The Rocsy." The camp is studded with Recreation Halls and Dayrooms — looked after by competent, attractive Red Cross girls. A fine gymnasium, recently built, offers opportunity for sports and body conditioning. League baseball games are weekly highlights.

With the arrival of the first WAC Detachment on the 25th of September, 1944, dances, picnics and dates could become casually accepted as part of off-duty routine. An organized dance band, staffed with the inevitable "hep" musicians, furnishes a roster of all late dance tunes, for the weekly get-togethers of officers and enlisted men.

The Special Services Department offers golf and tennis equipment, weekly Bush Trips for aspiring GI tourists, fishing trips complete with fishing tackle. An excellent Radio Station (WAGI) provides continuous broadcasts in the form of major radio programs recorded for overseas use, and daily news bulletins. A daily Base paper known as "Palaver" is available to all. A recognized arm of the famed GI college teaches those who want to learn. And a steady flow of fine USO entertainment is on tap for those who want amusement.

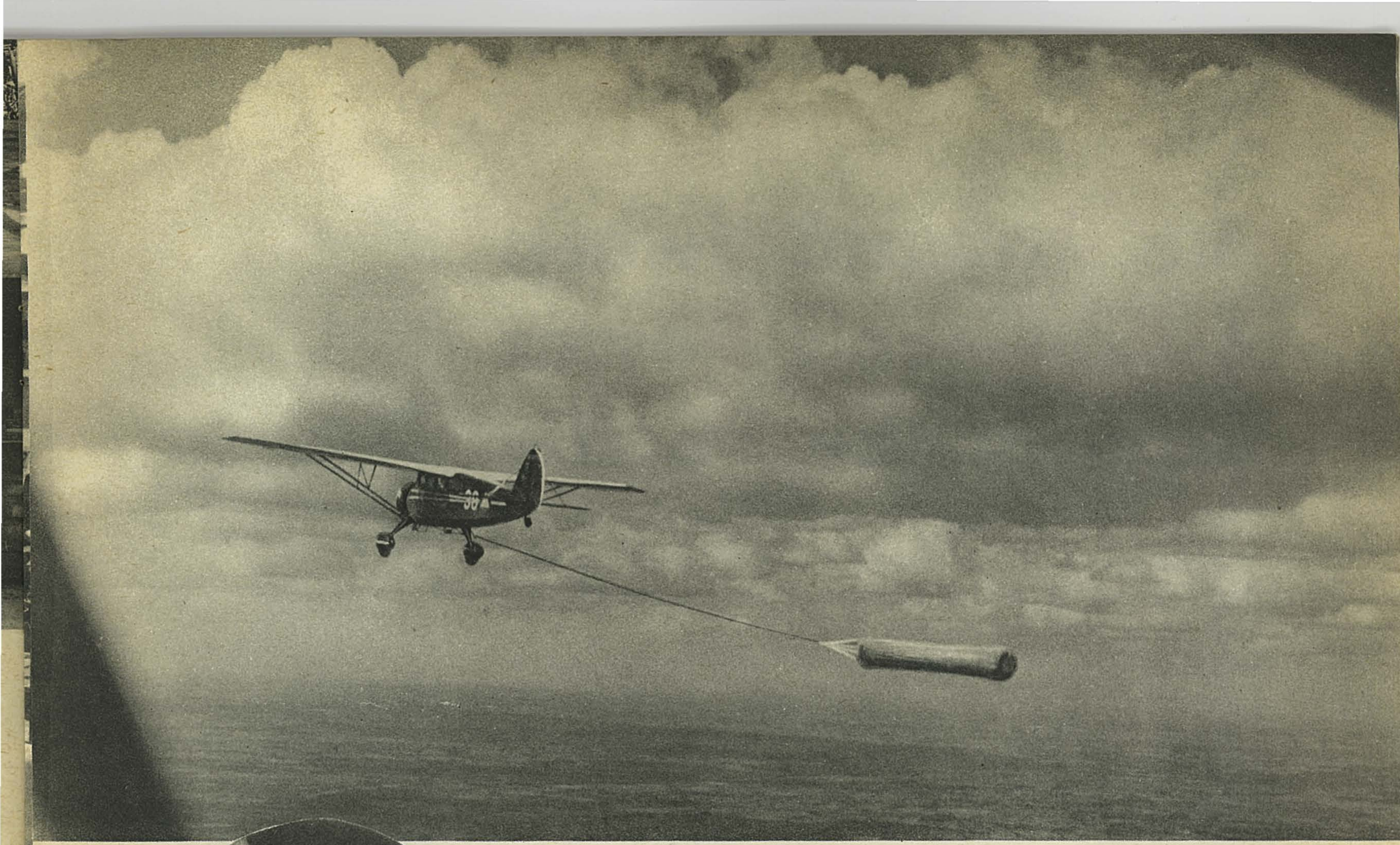
When a soldier stationed at the base has accrued sufficient furlough time, he has a choice of visiting such spots as Palestine, Cairo, Johannesburg, Asmara, Eritrea, and Casablanca, with transportation furnished and travel time discounted.

There are approximately 6,000 natives employed by the reservation as house-boys, clerks, janitors, carpenters, painters, drivers, and laborers, all necessitating the smooth operation of a large, detailed organization. These Gold Coast natives, who speak their own "Ga" fluently, and a questionable English halting between British perfectionism and American slang, are a clever and ambitious people. They learn rapidly and serve faithfully. Many are even now pursuing the hapless Jap through the dense Burma jungles.

The policy that forbids "fraternizing" between officers and WACs is strictly observed, but the scheduled officers' dances are frequented by nurses, Red Cross workers, and occasional visitors in the form of British officials and their wives. Our own nurses are often supplemented by an influx of the English "Angels of Mercy," called Sisters. Needless to say, competition for their partnership is keen. Bingo sessions are featured by the Club management—and for a change of scenery, a race track located near by provides exciting seasonal meets.

The "Accra Club," an organization of British Military and civil officials, is located in town. Transportation is available to officers at all times. The Base Post Exchange rates a Medal of Honor for quality and quantity. The installation of a bottling machine has even made the supply of coca-cola inexhaustible. Plenty of ice-cold local and American beer and ice-cream are always on tap; and a large night-clubbish structure, chortingly termed "Snafu-Pavilion," offers table service, a waxed dance floor, a fancy juke-box, and an impressive list of sandwiches.

The idea back of all this is that "a happy soldier is a good soldier." Today all GI hearts are naturally straining toward thoughts of home, even though many of the boys must remain in Europe still for a long time to come, while others go on to Japan. Accra is evidence that our Army knows the importance of morale, and uses this knowledge in very practical applications to the fullest possible extent. With Accra as an example of what our Services can do for their men when the opportunity offers, I think the folks at home needn't worry over their boys in the days ahead, even if lots of soldiers have to stay around in Europe after the war's end for quite awhile.



"Towing TESSIE STINSON"

by
Lieutenant
John C. McGee

"TOWING TESSIE" is a "pre-war lassie with a convertible chassis," working for the Civil Air Patrol. Shorn of two-tone leather upholstered seats and cushioned carpets, she is a Stinson Reliant that became a "Rag Dragger," or Tow Target plane.

In the last year and a half, on both East and West Coasts, the Civil Air Patrol established bases for towing aerial targets, to train gunners for anti-aircraft firing. This released a vast reserve of trained military personnel and combat planes badly needed on the battlefront.

Lt. Col. Julius L. Gresham, of Daytona Beach, Florida, a veteran of the U.S. Marine Air Corps in World War I and former CAP Anti-Submarine Patrol Base Commander, was put in charge of all Tracking and Towing throughout the Eastern Seaboard. Known as the 22nd Tow Target Squadron, with headquarters at Hyde Field, Clinton, Maryland, the many detached units have ranged from Key West, Florida, to the Canadian Border.

Towing targets is not a glamorous job, and Army pilots welcome any excuse to avoid it. The entrance of CAP into this work was hailed by Air Corps and Anti-Aircraft alike. Stinson pilots responded to their assignment with the same fervor and zeal which they had displayed in using their little planes on coastal patrol.

Towing targets for anti-aircraft gunners meant dragging twenty-five pounds of "fish" and target at the end of 3,000 feet of cable. It didn't seem practical to expect a Stinson to do it. But a Stinson Reliant Jr. was flown to Bradley Field, Connecticut, in November of '43, and a tow reel installed. The apparatus, weighing slightly over three hundred pounds, is identical to that used in single and twin-engined Army and Navy planes for similar purposes, with the exception of the amount of cable used.

Then came the first try out at the Northville Firing Point on Long Island, New York. Batteries of 40 mm. and 90 mm. guns gave "Tessie" the acid test. She proved such a huge success that orders were issued immediately for every available CAP Stinson of her class to be assigned to active duty with the U. S. Army Towing Detachment, for conversion to this new enterprise.

Flying day and night, in all kinds of weather, CAP pilots have been towing for every conceivable type of anti-aircraft gun.

The Onward Sweep of America's Power through the Pacific

SYMBOLIC of America's strides toward final victory in the Pacific is this U. S. Navy kodachrome of a Liberator landing in the midst of destroyed airplanes on a Leyte airstrip, when we retook the Philippines.

It is such airpower which has enabled us to move up to Japan's shores and make the Pacific Ocean an American lake, even while we were simultaneously fighting in Europe the greatest war of our history.

"In every one of the major and decisive naval engagements in the Pacific, the decision has been won by naval airpower." Those are the considered words of the eminent commentator of the N.Y. Times, *Hanson W. Baldwin.*

Further, our land-based airpower, in the hands of our Army Air Forces, now holds bases like Iwo Jima and Okinawa that will permit us to duplicate in Japan the steady strategic pounding which destroyed Germany's power for successful war making. The enemy realized this clearly by the Spring of 1945. The Tokio newspaper Yomiuri Hochi *admitted in April that the loss of Okinawa leaves Japan with "no hope of turning the course of the war," and the Tokio radio declared:*

"It is a mere 700 kilometers distance between the mainland and the Okinawa Islands. It is about the same distance from Okinawa to Taiwan (Formosa) Island. Once the enemy establishes himself on Okinawa, the greater one-half of the mainland of Honshu and Chosen (Korea) will also come within the flying radius of the enemy B-24s."

The fall of Germany hastens the coming of the feared B-24s and all our other bombers in overwhelming numbers. General of the Army H. H. Arnold, chief of the Army Air Forces, has promised that "every plane that is being used against Germany will be sent against Japan."

In taking the island bases our airpower needs for its final Pacific operations, we shall also acquire sources of nearby fuel. That is the ultimate meaning of our assaults on Borneo, rich in petroleum resources. (See Pacific Ploesti, *in March* Plane Talk.)

Meanwhile our destruction of Japanese airpower has proceeded so swiftly that already our ground troops can land in the Far East where they will, just as they did on the European continent, without serious threat from overhead. Since last September the Japanese air force has lost over 10,000 planes to the United States Navy and the Far East Air Force. Lieutenant General George C. Kenney, Commanding General of the Far East Air Force, said in March:

"Japan really lost a big air force in the Philippines. I do not think the Japanese Air Force is a threat to us any more. The Jap hasn't the pilots to fly the planes if he had them, and he hasn't the mechanics to maintain them if you gave him the planes. His good mechanics are down in Rabaul, Bougainville, Wewak, and in the swamps back of Hollandia. He can't evacuate them, because when he does try to send a ship out, our youngsters go out and sink it on him."

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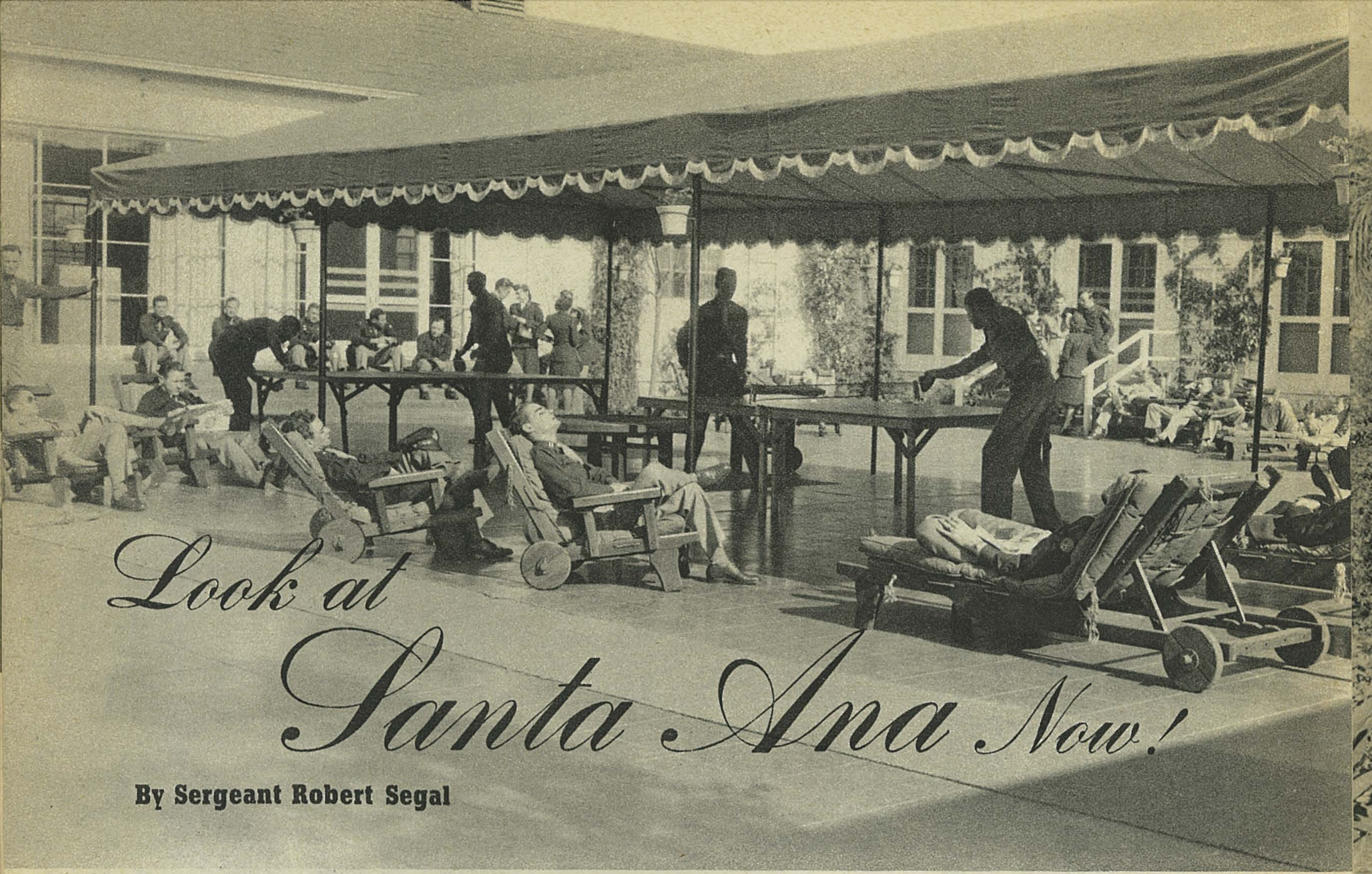
Look at Santa Ana Now!

By Sergeant Robert Segal



In the patio of the Officers' Club returnees can grab themselves a hunk of California sunshine, or just sit in the shade and dream. What a change!

FOR two and a half years, Santa Ana was the spirited, demanding, driving mistress of 125,000 pilots, bombardiers and navigators. As a preflight station, she spelled "shoot—and salute" to thousands of youngsters pounding down the hectic road to silver wings. Santa Ana Army Air Base was the home of 30-second formations, Sunday parades, 42-day confinements, drill, calisthenics, bivouacs. There was always some joker yelling "On the ball, mister!" "Strike that brace!" "On the double!" "Fall in!" "Fall out!" "Straighten that line!" "Hit that pivot!" "Let's get eager, Mister!" "Let's get some hubba-hubba!"

Santa Ana's old grads will always remember those things, and more. The grassless stretches of sand. The mud. The wind storms. The heat. The cold. She was a tough mistress, and had to be, because she was training a lot of raunchy kids to be soldiers.

Today, lots of the boys who went through that discipline are coming back — back to Santa Ana from the wars, to go through what is called Personnel Distribution. But the sight of the old place today practically floors them!

For, putting it in words of one syllable, the West Point of Southern California has been transformed into a Grand Hotel, complete with oyster cocktail on the dinner menu. As a redistribution and convalescent hospital combined, this preflight terror has been converted by the Personnel Distribution Command into a downright dream of heaven.

Its denizens enjoy grass and trees and lots of free time and marvelous chow. They can't even spell *formation* any more. The accent is on easy, pleasant living.

Put yourself in the place of a "returnee". Here you are, back in the U.S.A. with a chestful of hardware and an arm-load of service bars. Look around you. There's a 20th Air Force patch. Another from the 5th. The 7th, the 8th, the 9th. They're all here. What goes on?

First of all, as a "returnee" you have no military duties here. They call for you at the station, bring you out here in a bus (and that doesn't mean a GI ton-and-a-half). They check you in at the reception house — like a hotel lobby. There's coffee and light chow for the lonely hearts and empty stomachs, and there's a chaplain on hand, day and night, to give you all the free advice and help that a man could ask for.

The next day you fill out a few forms. Not enough to give you writer's cramp. Then they turn you loose. Explore the joint. Visit Hollywood, the beach, Cousin Minnie in Pomona. The day is yours.

On the second day, you begin to process. They examine your gizzard and your 12-year-old molars. They pinch and prod and X-ray and test and re-test. They find out what makes your wheels buzz around. They go over your clothing issue, and nobody tries to fast-shuffle you into a statement of charges, either.

They replace, without any lip, what's missing from your barracks bag. They tell you to drop around to the finance office where you get all the back pay that's coming to you. If your records are incomplete, they'll take your word for it. You bounce over to classification one day. Another combat veteran, assigned here, goes over your record, asks what you'd like to do, what you can do, what you can't do. He talks your language — he was over there, too. He'll give you the straight dope on what to do about getting the job you want and can do.

The swallows return to Capistrano, and meet some happy airmen who've just done some returning themselves. (The pigeons live here permanently.)

The processing takes you about six days. It's done in short jumps, a couple of hours at a time. Nobody's crowding you. You don't spend any great amount of time in a GI line. And when you are done for the day, your time is your own. When a suitable station is found, you ship. But until that time, you relax, play, have a flock of beers and a fling at Los Angeles. You're on your own good behavior and the gates are always open.

Special Services jumps in and opens quite a bag of tricks. Want to play golf, badminton, do some skeet shooting, deep sea fishing? They'll arrange it for you. Like to dance? See some Hollywood entertainment? It's at the service club. And there are tours to San Juan Capistrano (where the swallows come back . . . remember?) to Hollywood, to the homes of stars. There's roller skating, bowling, ice skating. If you want it, we got it, Joe. Just name your poison.

We have four chapels on the base and chaplains of the Catholic, Protestant and Jewish faiths. They're good Joes, those chaplains, and they'll be glad to shoot the breeze with a guy any time.

The service club is as beautiful as a perfect landing. And the officers' club is no slouch either. Drop around and take a look-see.

Maybe you like movies. Well, we have three shows on the base. One of them has a matinee every afternoon. Fifteen cents and your good conduct medal will get you past the door, even if you don't have a good conduct medal.

And while you're knocking yourself out at the Hollywood Canteen or grabbing a big chunk of bunk fatigue, what goes on with your records? Well, the classification department gets together with the medics. They decide what you are able to do physically and from the standpoint of training and ability. Your personal preferences are respected as far as possible. Maybe you go to Kelly Field as a clerk, Randolph as an instructor; maybe you go to a school for up-grade training in some specialty that appeals to you.

Some of you may stay here in intelligence, public relations, the convalescent program. Some of you go to the Continental air forces, to the training commands, to the Air Service Command, or stay in PDC. No matter what the deal is, Joe, you can bet your Air Medal against a Hoover button that it will be a square deal.

NOW, there's another group of returnees who amble up to the campus. They are convalescents ticketed for the hospital. Their deal reads a little differently.

It's a sad sack of a soldier who goes around feeling sorry for himself, thinking the world owes him a living or he isn't getting an even break. You won't find many guys of that stripe, because of the convalescent hospital. The hospital is concerned with getting you on your feet, fit for a job, ready to take a healthy swing at life in the Army or on the great outside.

They don't try to fit round pegs in the square holes. They find out what, if anything, is wrong with you. They fix the damage, physical or psychological.

Every group of patients has a personal physician. He's the old family doc who calls a bellyache a bellyache. He's your personal contact between you and the Army Medical corps. He's on your side. He gives you the inside track on what goes on.

You also have a personal advisor. It's his business to straighten you out generally—

In the classification center you recline in an easy chair while waiting for attention. "Thou shalt not have a GI line" is a first commandment at the Santa Ana Army Air Base.

find out what you want to do. The hospital asks that you spend a couple of hours every day *doing* some job. Maybe you like to fool around a wood-working shop. Fine. Maybe you want to brush up on your math. Swell. If you're an athlete, student, carpenter, clerk, bookkeeper—they have something to interest you.

Listen to this, Joe. More than 150 guys have received their high school diplomas in this very hospital. Trained high school teachers come out and give you the courses you need to qualify. And—get this!—several men have graduated from college and received their diplomas while they called our hospital home. You can fit into any one of these little plans of your own choosing. The personal advisor and personal physician will tell you how it's done.

Meanwhile, you have a game leg or an arm full of flak. Okay. The docs will work on that little problem while you're keeping busy and happy with the kind of work you *want* to do. There's not a single AAF Joe who isn't a hot man for at least one line of work. They help you to find that line and train yourself to be damned good at it. A man who can do a job doesn't have to feel sorry for himself—and he won't.

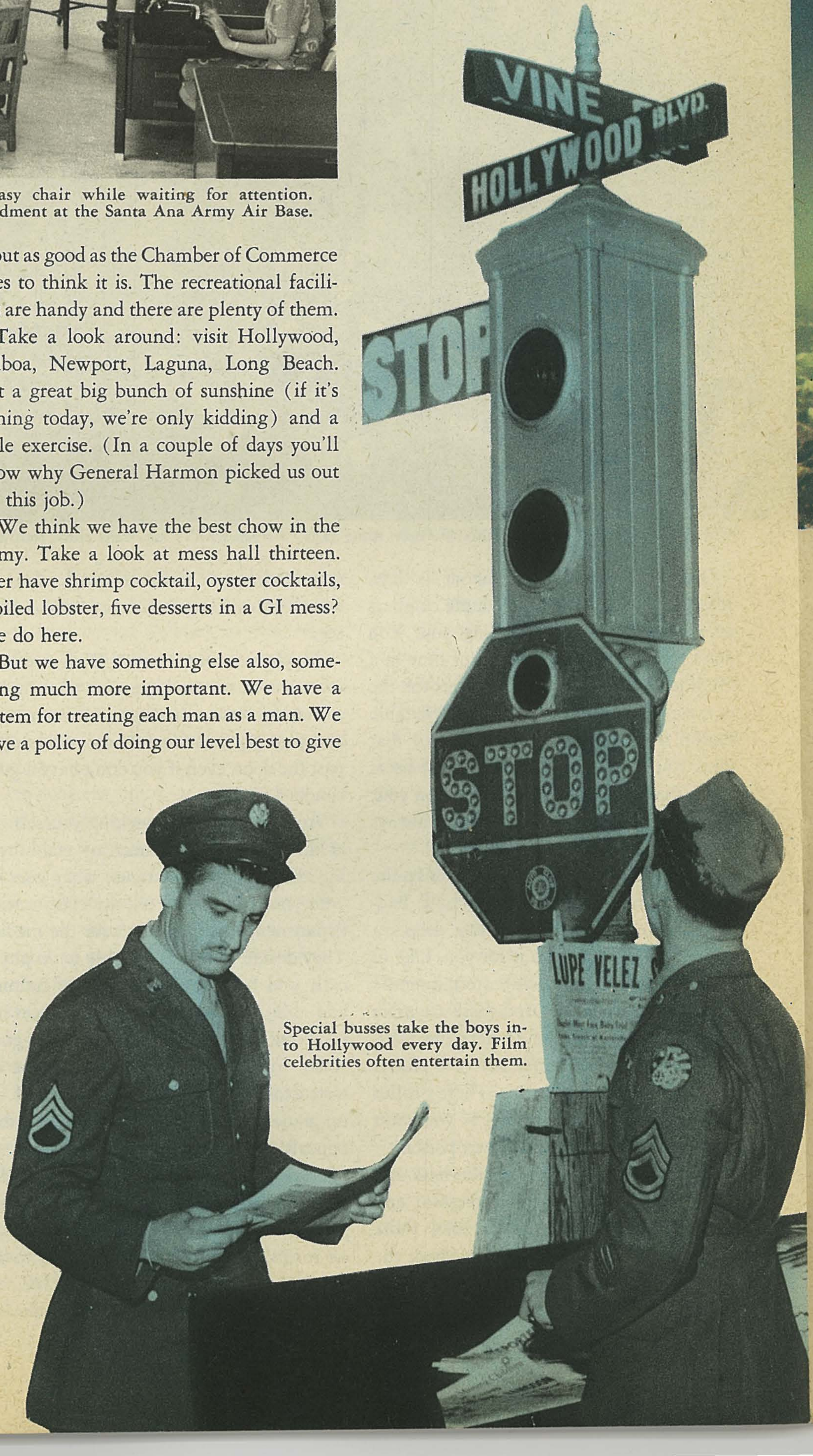
They don't slap you in bed, either. The object is to get every guy out of the sheets as soon as possible. You'll be walking around in your OD's just as soon as you can. You'll forget you are in a GI pill factory. You'll get out sooner than you think.

So that's the picture. You'll be able to fill in the details yourself. Winding this thing up, why did they pick Santa Ana for a redistribution station and convalescent hospital? For one thing, the climate is just about as good as the Chamber of Commerce likes to think it is. The recreational facilities are handy and there are plenty of them.

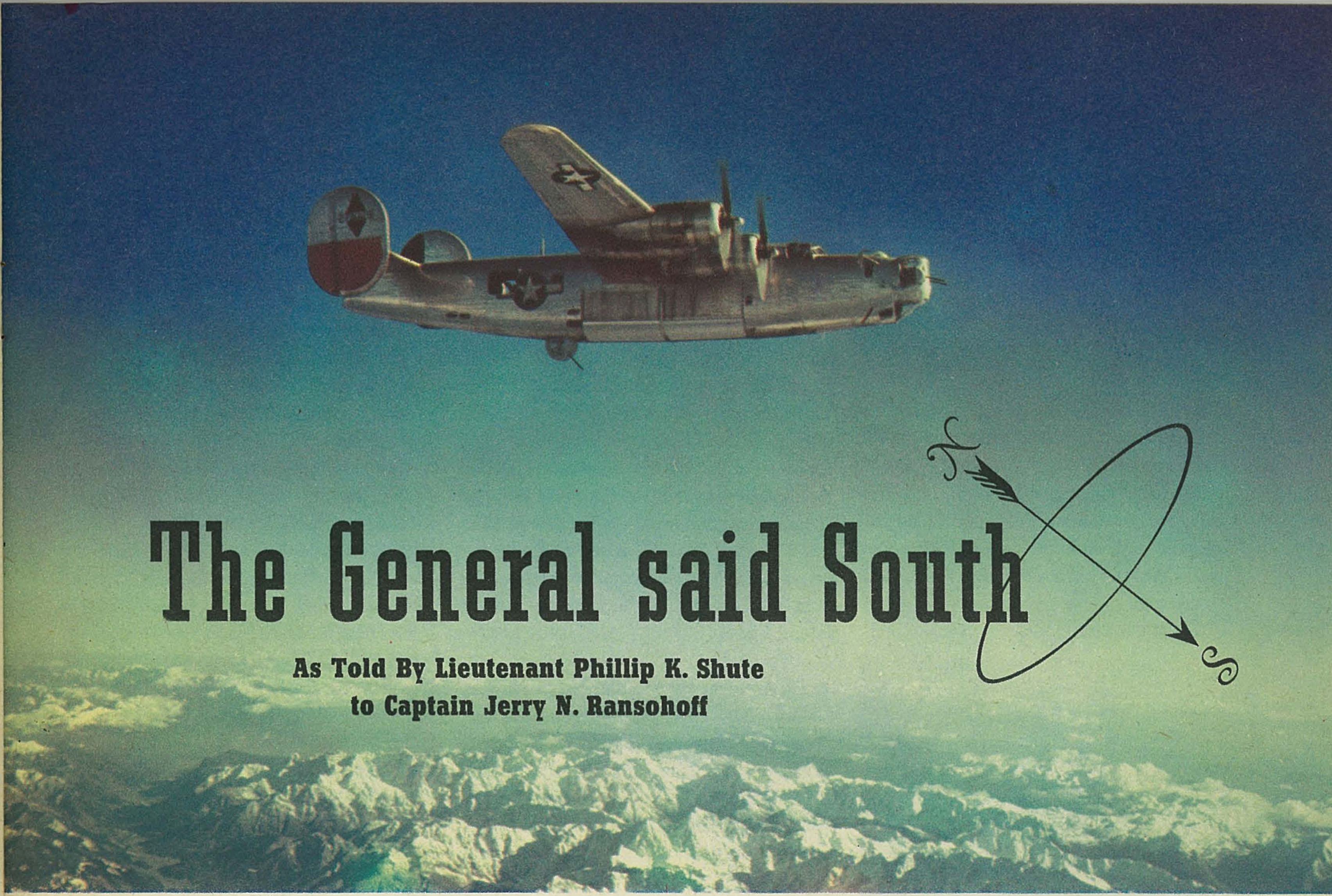
Take a look around: visit Hollywood, Balboa, Newport, Laguna, Long Beach. Get a great big bunch of sunshine (if it's raining today, we're only kidding) and a little exercise. (In a couple of days you'll know why General Harmon picked us out for this job.)

We think we have the best chow in the Army. Take a look at mess hall thirteen. Ever have shrimp cocktail, oyster cocktails, broiled lobster, five desserts in a GI mess? We do here.

But we have something else also, something much more important. We have a system for treating each man as a man. We have a policy of doing our level best to give every guy a 100 per cent okay deal. How well we've succeeded was illustrated not long ago when the ground forces decided to work out for the returned GIs the same sort of system we're using in the Air Forces in places like Santa Ana. We take that to mean we've done a pretty slick job.



Special busses take the boys into Hollywood every day. Film celebrities often entertain them.



AAF Kodachrome

The General said South

As Told By Lieutenant Phillip K. Shute
to Captain Jerry N. Ransohoff

So this Liberator crew made a pioneering flight of 10,000 miles, to the Pacific tropics and back.

"I WANT to go to Hawaii," the General told us one morning in December.

Two-and-a-half days later our Aleutian base dropped behind us and we were off to the tropics in our Liberator. It was the first leg of a 10,000-mile trip to pioneer two new air routes over the North and Central Pacific.

The "General" was Major General Davenport Johnson, commander of the Eleventh Air Force, and "we" were a crew of six, together with some distinguished passengers.

The crew of six standing beside "Down and Go" in the midst of Aleutian snow, with the 11th Air Force insigne on their B-24.

Nothing exciting happened on our trip at all—except that we moved from one world to another and back again, all in less than a week. That made it something for us to remember—just because we did it as simply as you'd have made a vacation canoe trip up the Hudson, a few years back. Maybe you'd like to hear about it.

As a crew, we felt heavy responsibilities. For we were carrying as passengers six high-ranking officers of the Aleutian Theatre from the Army, Navy and Marine Corps. There were, in addition to Major General Johnson, Vice Admiral Frank Jack Fletcher, Commander of the North Pacific Force and area, with Captain J. J. O'Donnell and Colonel R. A. Boone, USMC, of his staff; together with Colonel J. R. Dunlap of the Alaskan Department and Major Thomas G. Netcher, assistant operations officer for the Eleventh Air Force. Major Netcher was to assist with the piloting.

Our plane, "Down and Go", of the Eleventh Air Force, was a B-24, fitted with bomb bay tanks to carry a very heavy load of gas for long-range flight.

Our take-off was planned for night. With our crew, passengers and luggage, the plane was heavily loaded as we taxied out to the runway. There Major Wright asked for take-off instructions—destination: Hawaii. That was 2,300 miles away—over a route never flown before in a land-based plane.

We got the clearance from the tower and the Liberator started down the runway gathering speed. We used up most of the runway before we were air-borne, but there was nothing unusual about this—we had taken off with heavy loads before.

There were the usual Aleutian winds.

Maj. Gen. Davenport Johnson (right) and Vice Admiral F. J. Fletcher with their B-24 at Hawaii.

But we found that the weather officer had given us reliable weather information. We had little difficulty climbing to calmer air and holding our course. Major Wright completed his two hour shift at the controls uneventfully, and Lieutenant Kline took over, flying from the left side, with Major Netcher coming on as co-pilot.

Unknown to me, Sergeant Adaway kept in radio contact with our home base all the way out and secured repeated fixes on our position. (He was checking on me.) I found that the navigation presented few problems. Once we got out of the northern weather, I could get celestial fixes—something rather infrequent in the Aleutians.

The author: "Once we got out of the Aleutians, I could get celestial fixes." His ETA was perfect.

Around 0830, Aleutian time, the twilight that precedes the dawn began to light the sky. The passengers stirred, and began stretching to get the kinks out of cramped muscles. Pfc. Hillenbrand, assistant engineer, took over as chief cook and steward.

The cooking of the coffee proceeded satisfactorily enough. But when it came to the eggs, the air was just rough enough to keep the eggs from staying on the hot-plate long enough to get cooked. Each time Hillenbrand would crack an egg on the plate the plane would lurch slightly and the eggs would slip to the floor.

After nearly a dozen tries, the cook scooped the eggs off the floor and dropped them out of the bomb bay—we dropped our "eggs" literally. So coffee and cookies made up the breakfast. We determined to get hold of a good high-sided frying pan at Honolulu.

The cook had egg trouble: "We determined to get hold of a new high-sided frying pan in Honolulu."

A LITTLE over 1,000 miles out of Hawaii, with Major Wright at the controls, our Number 2 engine, the port, inboard one, began to falter. Oil pressure fell and cylinder temperature started to rise. Rather than risk ruining the engine by running it longer, Major Wright cut the switch and feathered the propeller. We lost, perhaps, ten miles-per-hour air speed and our gasoline consumption increased slightly. But the Liberator flew along perfectly, and we still had plenty of range left.

In the "cabin" the Admiral and the General had played to a draw in their cribbage contest. Cards and peg-boards were put away, and papers were taken out from brief-cases for study. There was much work ahead at Admiral Nimitz's headquarters on Oahu.

"Down and Go" churned steadily along on three engines. The outside air kept getting warmer and now sweaters came off, ties were loosened and sleeves rolled up. Fifty miles out of Oahu, four P-47s suddenly appeared to escort us in. We'd heard nothing about any proposed escort, and their arrival was a complete surprise. They wheeled overhead like small dogs around a St. Bernard.

Then Major Wright announced a landfall on the horizon. All hands were immediately at windows, trying to get a glimpse of the storied tropical islands, complete with real trees. To the Aleutian soldier, trees are one of the signs of civilization.

As we drew closer, Oahu loomed dead ahead. We had hit it on the nose, ETA and all. We felt pretty good about the whole thing. The P-47s left us as we got over Hickam Field. As we came in, the smell of the sea and fertile earth filled the plane. The Aleutians are almost odorless; this warm-wet smell of Oahu was a new and heady experience.

After exactly 12 hours and 39 minutes in the air, the Liberator taxied up to the Operations Office. We had completed the pioneer land-plane flight from the Aleutians to the Hawaiian Islands.

Our passengers were carried off in a staff car to the first of a series of important meetings with other Pacific war leaders, and "Down and Go" was turned over to the Hawaiian Air Depot for an engine change.

Our own first move was to find quarters somewhere near the ocean—a delicious, warm ocean. Water around the Aleutian Islands is all too cold for anything except fish, seals and the Navy. The Special Service Office arranged for both officers and enlisted men of the crew to stay at cottages barely half-a-block from the famous Waikiki Beach, so we could swim whenever we desired.

We began almost immediately. The water was terrific—warm, blue and salty. Our bodies soaked up the hot sunlight.

The chief difficulty arose when we came to put on our Aleutian clothing again—in the north we had worn only woolen clothing and none of us had had any khakis along. Officers made a rush to the nearest Post Exchange for khaki shirts and trousers; the enlisted men, more fortunate in this respect, went to the nearest issue warehouse and drew tropical clothing.

Then, that first afternoon in Hawaii, it began to rain. We loved it. This may sound peculiar, for those who endure so much rain in the Aleutians. But this rain in the tropics fell straight down, instead of coming in on a 40-knot wind. And it was warm. We stood out in it and got soaked as it fell in long spiky rods, and felt good all over.

The next morning it was all clear again and Waikiki Beach was wide and white in the sun.

That night when we returned to our quarters there was a message to call General Johnson.

"I want to go to Kwajalein," the General told Major Wright on the phone. Major Wright told the General that we were ready to leave at any time—"Down and Go" was repaired and tested and raring to go.

There were only seven of us when we taxied out on the runway — the six crew members and General Johnson. For our other passengers stayed behind.

When Major Wright called the tower to request clearance, he was asked "Have you been sprayed?"

We hadn't. Here was something that we of the Aleutians didn't know—that all inter-island traffic in the Central Pacific has to be fumigated before departure from an airfield, so that disease-bearing insects are not transported from island to island. It's too cold for such insects in the Aleutians. We had to taxi over to the medical station to pick up an antiseptic bomb, with which we thoroughly fumigated the plane before we took off.

A few minutes later, green Oahu was below us and we were headed out over 2,100 miles of water to the famous Kwajalein Atoll, where one of the great battles of the Pacific had taken place. We had the windows open slightly and it was warm. It is hard to describe how much pleasure it was, flying along, high over the blue Pacific.

I gave the pilots a heading that would take us north of Wotje, Jaluit and Maloelap, still held by the Japanese. In the clear sky I could get frequent sunlines; with predictable winds we made our turn at the proper time, and hit "Kwaj" on the nose, after 11 hours and 20 minutes in the air.

"Kwaj" was a new experience for all of us except General Johnson—the first area we had seen where United States forces had been used in an all-out amphibious operation. We stood and stared at the trees with their tops blown off by the heavy aerial and naval barrages.

We found Kwajalein strictly GI. There are no private dwellings or surfboards. We swam in the lagoon and found it was like bathing in tepid soup. Those stationed on the atoll told us that it was a relatively chilly day—but we found it so warm that we cut the legs off our trousers and rolled up our sleeves to get cool and comfortable. Besides, we wanted more sun.

OUR next jump, after the overnight stay at Kwajalein, was a surprise. The General told us that our destination was Saipan.

Again we were fumigated before taking off. Then came another uneventful trip, and we touched down at this hard-won American air base from which our Twentieth Air Force now constantly bombs Tokio.

At Saipan we felt like a bunch of tourists. Everybody there treated us royally, questioned us extensively as to the horrors of Aleutian weather, and moved us into quarters reputedly once occupied by Japanese non-commissioned officers.

The quarters were pretty badly beaten up and riddled with bullet holes. First they had been the target for American aircraft, and of late had been strafed by countrymen of their former occupants. We went to the outdoor movie that night, before turning in, and the next day made a tour of the island to see where the fighting had taken place. But aside from a number of large craters made by bombs and naval shells, there wasn't much to look at; the island has been pretty well cleaned up.

The rest of our trip was now no secret. We had two more pioneer flights to make on our way home. After two days at Saipan, we set out again, headed for Midway. Our Liberator was to be the first airplane ever to make the Saipan-Midway flight. It was 2,600 miles, the longest hop of our trip.

We breakfasted on C-ration and fried potatoes, reminiscent of some of our Aleutian meals, and some while after taking off passed between Marcus Island and Wake Island, still held by the Japanese. Then, thirteen hours and forty minutes after take-off time, we landed at beautiful and well-developed Midway.

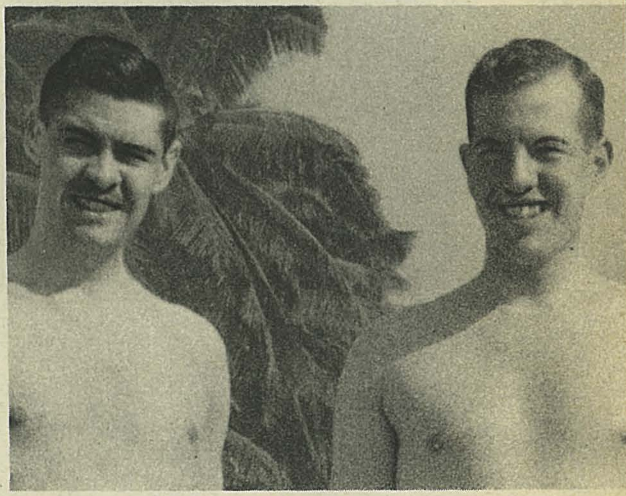
It was still warm and balmy and our abbreviated shorts were in order. We were installed in luxurious modern barracks and enjoyed excellent food for our brief stay. Because the General was anxious to get back home we took off at noon the following day, with a regretful goodbye look at the Goonie birds haunting the warm rocks.

We took a heading almost due north. The hop from Midway to our home base was little over 1,500 miles. As we flew along, the blue of the sea changed almost perceptibly. The air grew colder and rougher steadily, and we changed back into our woolen clothing. Next came the sweaters; finally we had to don heavy arctic gear.

Pfc. Hillenbrand with a new skillet had the cook-stove under control by this time, and we ate well and with relish. Snow squalls now began to cross our path and the sky became overcast. Some nine hours after leaving tropical Midway, we passed over our home range station and made the usual instrument let-down in the overcast. The runway gleamed whitely below, strangely like the coral runways at Midway in the tropics. This whiteness was packed snow.

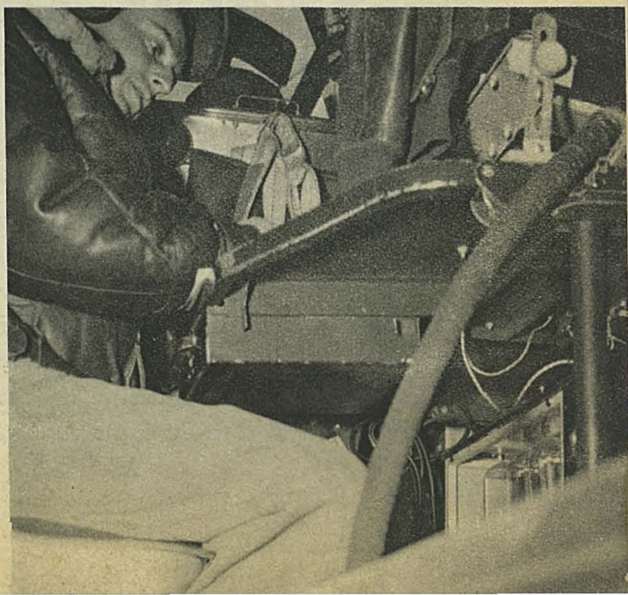
The General talks with Colonel Keatley of the Alaskan Department, while on the field at Hawaii.

As we stepped out of the plane a cold blast of wet sleet hit us in the face. "Down and Go" was rolled into the hangar and we headed for the mess hall. In a little over 56 hours of flying time we had covered 10,000 miles over the North and Central Pacific, had crossed 86 degrees of latitude and 76 degrees of longitude, deep into the tropics and almost to the Equator.


The author with Major William B. Wright, who piloted the trip: "Our bodies soaked up sunlight."

We would have much to tell the gang.

Staff Sergeant Adaway kept in radio contact with the home base, quietly checking on the navigator.



At left, workers prepare Fiberglas for use in making new Conolite laminations.

• • •

Below, Plastipeel film is removed from metal after use as protective coating.

Photographs by Edward Sievers

Useful New Plastics

THREE extraordinary new plastics—Conolite, Plastiform, and Plastipeel—have been helping Consolidated Vultee maintain production during shortages of manpower and materials.

Conolite is a new high-strength plastic laminate that is stronger and lighter than the aluminum alloys ordinarily used in fabricating aircraft parts. Made by impregnating Fiberglas or Fortisan fabric with a new kind of thermosetting resin, it will develop tensile strengths of as much as 120,000 pounds per square inch. It was developed by Dr. G. G. Havens and G. A. Gordon, two research engineers at Consolidated Vultee.

Metal and fabric airplane wings lose a certain amount of efficiency after prolonged periods of operation, due to small mars made by rocks or debris which are encountered while taking off and landing. But Conolite wing surfaces withstand such impacts without losing the smoothness of their contours.

Plastiform is a new material that develops compressive strengths of as much as 15,000 pounds per square inch. It can be cast without shrinkage or warpage by pouring, brushing, dipping, or spraying. Because it melts at a temperature of only 240° F. and cools rapidly, Plastiform can be used to produce individual casts in only four minutes. The finished casts can be polished with steel wool and sawed, sanded, drilled or machined like wood.

Plastipeel is a new kind of coating—a lacquer-like material that can be used on metal surfaces to prevent scratches, mars, and corrosion. It is applied by either brushing or spraying, dries rapidly and forms an extremely tough film.

Plastiform and Plastipeel were both developed by L. C. Wilson, former manufacturing research specialist for Consolidated Vultee.

AAF Photo

BOMBING WITH WORDS

by Captain Arthur Settel

YOU think of Liberators as dropping bombs. But in this war our bombers have also dropped millions of pamphlets.

Anthony Eden once announced in the House of Commons that 77 per cent of all German prisoners captured in France either carried leaflets on their persons, or had used them in surrendering.

How much this pamphlet barrage by the Air Forces contributed to the final German debacle we shall hardly know until long after the war's end. Even then, students of psychological matters will probably disagree.

We do know that our pamphlet bombing ended the news black-out in Germany and her satellite countries. As soon as we gained air supremacy—the same supremacy that permitted our D-Day landings on the Continent in 1944—we rained down thousands of tons of Allied leaflets on the Germans and their occupied territories. We kept it up until our troops were across the Rhine and in the heart of Germany, taking thousands of German prisoners every day.

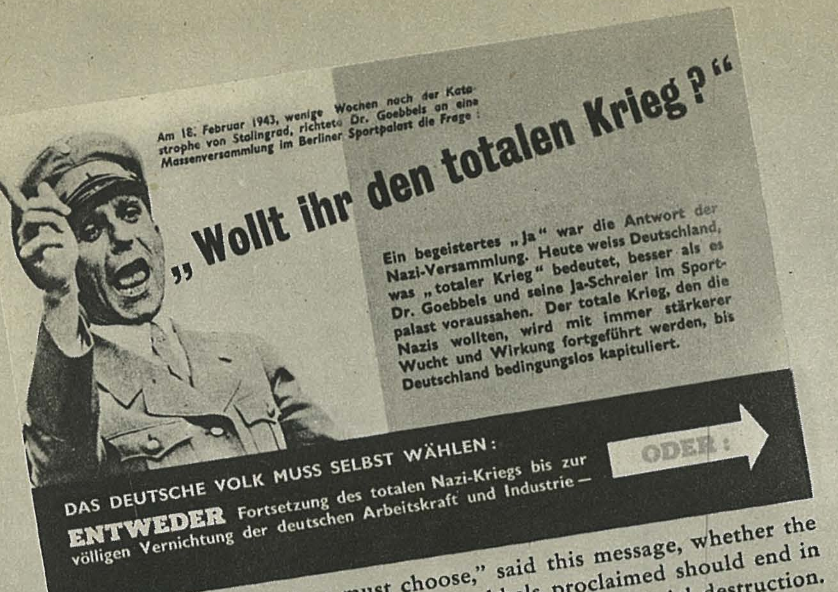
A newspaper in Nazi-dominated Budapest, for instance, published the following report:

"A ridiculous leaflet written with mean intentions comes floating down; people run towards it and stretch up their arms. They almost attract the slip with their eyes, for the people of Budapest are most impatient. A crowd scrambles for the leaflet. They push each other. They tread upon each other's worn-out shoes. They wrestle. A short-sighted elderly gentleman says: 'That slip is mine—I saw it first.' 'It is mine,' screams a woman. The crumpled slip is wrenched from her hand and torn to bits."

What makes this report most surprising is not that the leaflets were in great demand, but that publication of the incident occurred in a German-censored newspaper.

Himmler, chief of the Gestapo, issued a decree in 1943 that made death the penalty for circulating these pieces of "subversive literature."

"Any duplication of enemy leaflets, illegal circulation of these leaflets or of their



Am 18. Februar 1943, wenige Wochen nach der Katastrophe von Stalingrad, richtete Dr. Goebbels an eine Massenversammlung im Berliner Sportpalast die Frage:

„Wollt ihr den totalen Krieg?"

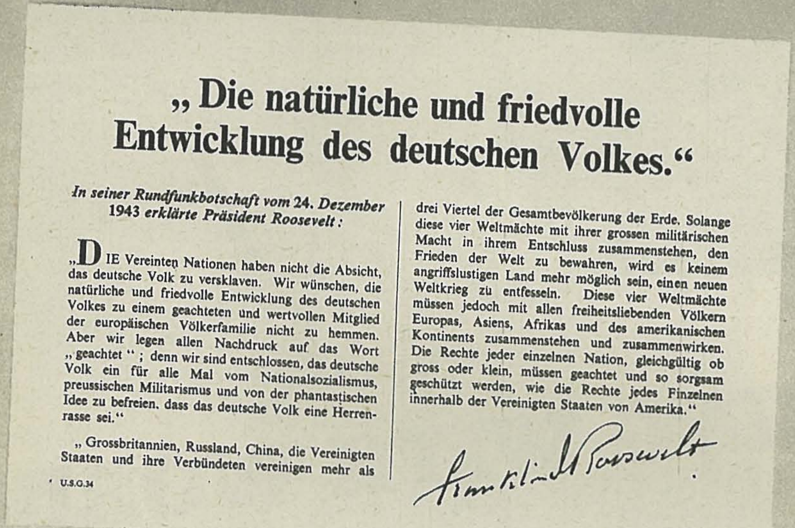
Ein begeistertes „Ja" war die Antwort der Nazi-Versammlung. Heute weiss Deutschland, was „totaler Krieg" bedeutet, besser als es Dr. Goebbels und seine Ja-Schreier im Sportpalast voraussahen. Der totale Krieg, den die Nazis wollten, wird mit immer stärkerer Wucht und Wirkung fortgeführt werden, bis Deutschland bedingungslos kapituliert.

DAS DEUTSCHE VOLK MUSS SELBST WÄHLEN:

ENTWEDER Fortsetzung des totalen Nazi-Kriegs bis zur völligen Vernichtung der deutschen Arbeitskraft und Industrie —

ODER:

"The Germans themselves must choose," said this message, whether the "total war" that Goebbels proclaimed should end in their complete industrial destruction.



„Die natürliche und friedvolle Entwicklung des deutschen Volkes."

In seiner Rundfunkbotschaft vom 24. Dezember 1943 erklärte Präsident Roosevelt:

„DIE Vereinten Nationen haben nicht die Absicht, das deutsche Volk zu versklaven. Wir wünschen, die natürliche und friedvolle Entwicklung des deutschen Volkes zu einem geachteten und wertvollen Mitglied der europäischen Völkerfamilie nicht zu hemmen. Aber wir legen allen Nachdruck auf das Wort „geachtet"; denn wir sind entschlossen, das deutsche Volk ein für alle Mal vom Nationalsozialismus, preussischen Militarismus und von der phantastischen Idee zu befreien, dass das deutsche Volk eine Herrenrasse sei."

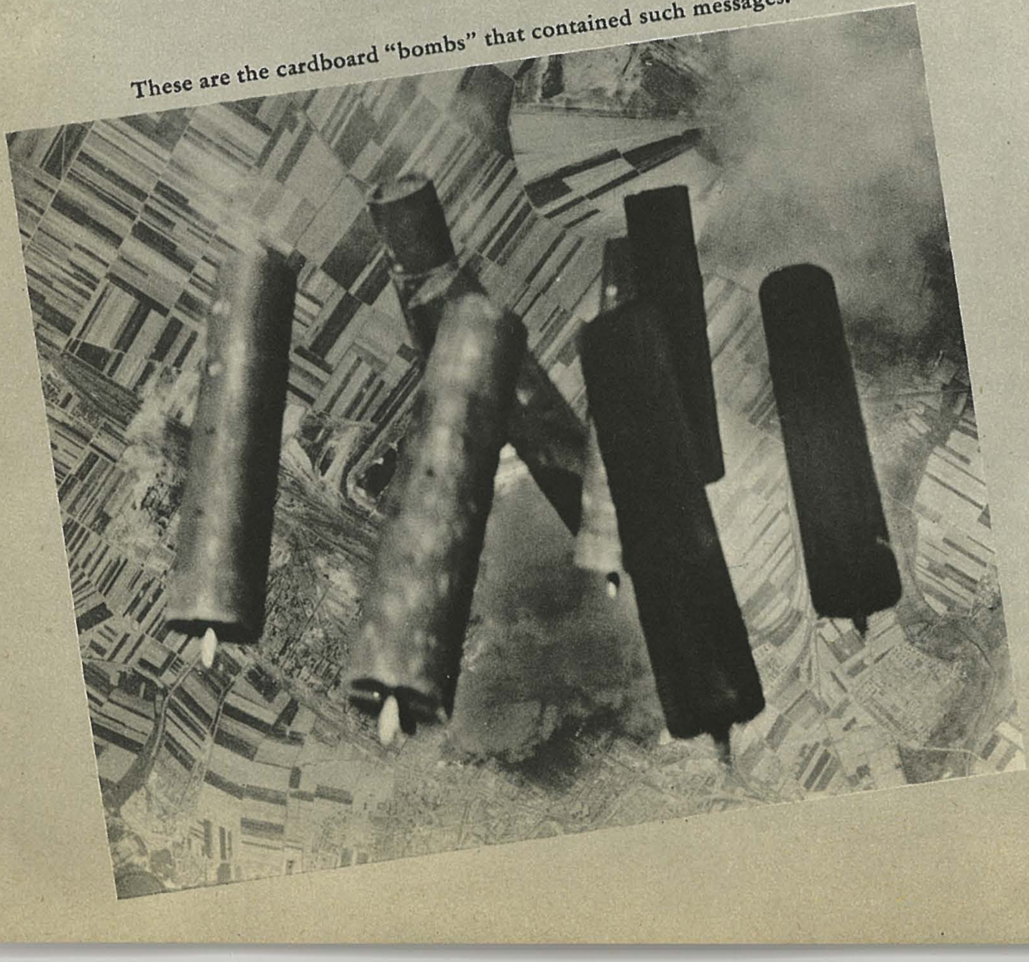
„Grossbritannien, Russland, China, die Vereinigten Staaten und ihre Verbündeten vereinigen mehr als drei Viertel der Gesamtbevölkerung der Erde. Solange diese vier Weltmächte mit ihrer grossen militärischen Macht in ihrem Entschluss zusammenstehen, den Frieden der Welt zu bewahren, wird es keinem angriffslustigen Land mehr möglich sein, einen neuen Weltkrieg zu entfesseln. Diese vier Weltmächte müssen jedoch mit allen freiheitsliebenden Völkern Europas, Asiens, Afrikas und des amerikanischen Kontinents zusammenstehen und zusammenwirken. Die Rechte jeder einzelnen Nation, gleichgültig ob gross oder klein, müssen geachtet und so sorgsam geschützt werden, wie die Rechte jedes Einzelnen innerhalb der Vereinigten Staaten von Amerika."

Franklin D Roosevelt

U.S.G.34

Or would the Germans listen to Roosevelt's assurance that the United Nations have no intention of enslaving the German people?

These are the cardboard "bombs" that contained such messages.



contents, is prohibited," he added—to reveal that German anti-Nazis were indeed circulating them.

But Himmler could not stop people from picking up the leaflets, because they fell everywhere — in places remote from the mailed fist of authority. And the Luftwaffe could not stop the American and British planes which dropped them, because the Luftwaffe lacked sufficient power.

Almost innumerable types of leaflets were used, each with its special purpose, aimed at a selected psychological objective. Some were intended to foment discord among troops, some to worry and to demoralize enemy supporters, others to inform and alert friendly peoples.

The leaflets, packed in cardboard bombs, were delivered to air fields located closest to the targets on which our airmen would drop them. The bombs were cardboard cylindrical containers, laced with explosive primer cords and detonated by a barometric fuse. The fuse, that is, could be set at a predetermined altitude to scatter the leaflets in the desired concentrations.

Some 80,000 leaflets can be contained in a standard 300-lb. bomb, these bombs being designed for release from high altitudes, but set to discharge above an objective at a lower altitude where chances of the handbills being blown away would be minimized.

Another form of leaflet barrage was bundle dropping, the bundles being released at low altitudes in high winds. They would often travel long distances before reaching the ground.

To insure the bundles of newspapers breaking open and scattering over their targets, special care had to be taken. After clearing a plane, the packages had to mushroom open, since solid packages hitting the ground would ruin their original purpose. So the packages were tied top and bottom with cord over a sticker reading, "Please cut *one* string with knife before releasing." The bundle would break open in a cloud on passing the slipstream.

The bombs were well suited for dropping by heavy bombers like our Liberators, by day and even oftener by night. But sometimes the leaflets were dropped by fighter planes, by C-47 cargo planes and even by the Stinson L-5s, which have been used for pinpoint distribution of surrender passes to small groups.

THE first Allied bomber to fly over the Normandy beachheads on D-Day carried no blockbusters or armor-piercing explosives, but a cargo of leaflets informing Germans manning the shore batteries that they had lost the war and should surrender to take advantage of the safety in American prisoner of war camps.

Other leaflets followed regularly. We also initiated a regular newspaper for German troops. The first issue of *Landser-Post,* printed in German for distribution five-times weekly to German enlisted troops, was already on the presses when Normandy was invaded. We also distributed by air a paper for the French—*The Courrier des Nations Unies.*

Allied intelligence reports were scrutinized by the French Leaflet Section with special attention to information collected from recent French refugees. It was the consensus that the most valuable function of Psychological Warfare would be to supply fresh, daily news to the news-starved occupied territory. That is how, on June 6th of 1944, the *Landser-Post* and the *Courrier* became airflown daily newspapers, reportedly the first in history. Some 395,000 copies were printed of each issue. The AAF dropped them on Southern France just 36 hours after the first landings.

As the campaign proceeded, other periodicals were added, including newspapers in German like the *Frontpost* and *Nachrichten,* which were dropped on a daily milk-run. We also issued magazines—such as *Fontaine,* a cultural periodical for French readers, and *Toujours,* a fashion magazine for French women.

In contrast to "strategic" leaflets dropped on countries for their long-range effect upon whole populations, the pamphlets directed at troops are classed as "tactical." They are designed for immediate effect. In July of 1944, for instance, two tactical leaflets were prepared and disseminated on the Cherbourg Peninsula at the urgent request of the 21st Army Group, and 2,800,000 surrender leaflets were dropped by AAF planes.

Entitled "War on Four Fronts," this broadside posed a number of questions meant to undermine morale in frontline troops of the Wehrmacht:

> The Allied Expeditionary Force was assembled on the English coast without the German air force attacking it. *Why?*
>
> Many thousand Allied ships were assembled in British harbors without the German air force attacking them. *Why?*
>
> The Allied Expeditionary Force reached the French coast without the German air force attacking it. *Why?*
>
> The Allied Expeditionary Force broke through the first line of the Atlantic Wall and established bridgeheads without the German air force attacking it. *Why?*

During invasion month, June, 1944, over 87 million leaflets were dropped in occupied Europe, and in July more than 140,000,000. Of these, 53½ million were directed at the French people and German troops in France.

The tactical leaflets attacked the German's faith in ultimate victory, played on his homesickness, exploited his gripes, emphasized Allied progress, planted seeds of subversion. Nor were these appeals only in German. Every European language was used to warn, cajole and inform the troops of many nationalities impressed for service in the German Army. The soldier newspapers reported Russian successes, charted advances of the armies in Italy and France, told the results of Allied bombing attacks on Germany's industrial machine.

They gave instructions on the internationally recognized procedure for surrender, recounted the rights of prisoners under the Hague and Geneva Conventions, described the decent treatment available to prisoners of war in American and British camps.

The work of preparing the material was often done right within earshot of front line guns. This permitted them always to be addressed to timely, current developments.

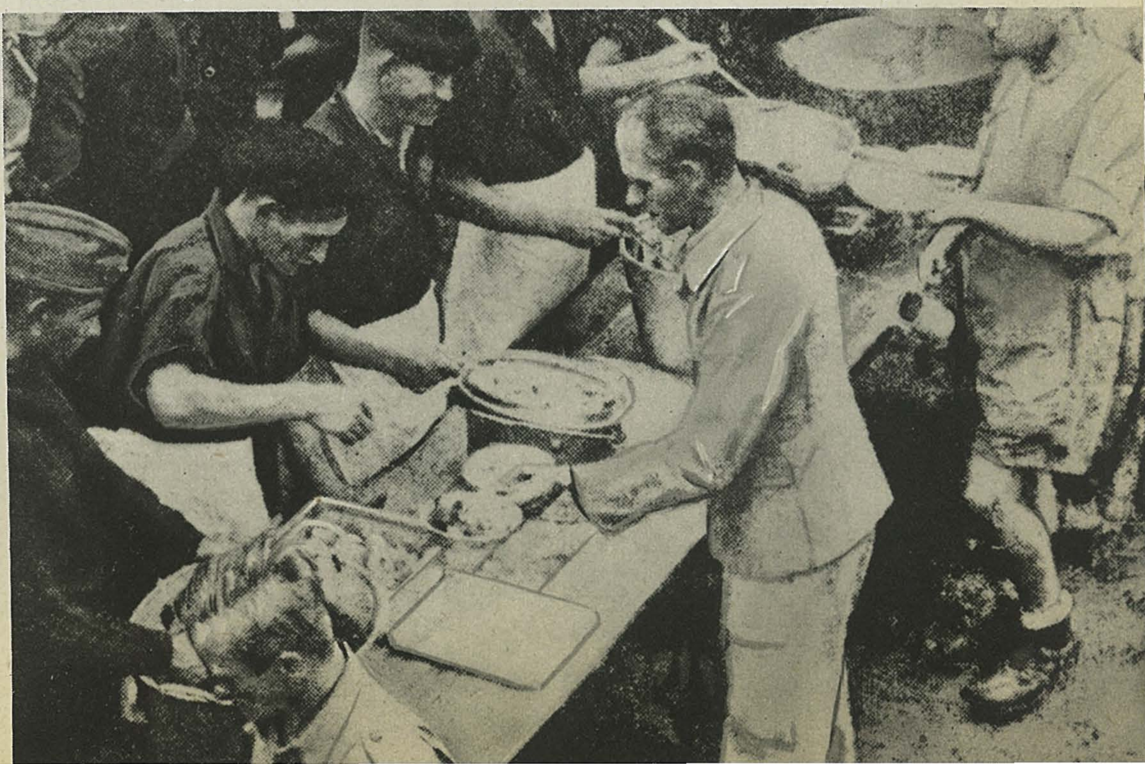
One leaflet, for instance, was written, printed and delivered within 48 hours of the assassination attempt on Hitler, to declare that the Fuehrer, Himmler and Goering could not hope by propaganda statements to minimize the incident's significance. "They are fighting for their own lives, and will drag Germany down with them."

Various captured documents showed how seriously the German High Command viewed these verbal barrages from the skies.

"The enemy will drop or fire over leaflets," one German order said. "Nobody below the rank of Major will pick them up. These leaflets will invite you to desert and enjoy the amenities of prisoner of war camps. Remember if you do, you will be taken to England and run the danger of death by the robot bomb."

The troops were told to turn in the leaflets after marking them with the word *Feindpropaganda* ("Enemy Propaganda"). They were informed that their families would be held accountable if they disobeyed this order.

The forces that we have brought to bear to destroy a barbarous enemy have been innumerable. One of the greatest was our intolerable bombings that smashed the major German cities to rubble. The results of that we can now measure with our eyes. What our bombings with pamphlets accomplished we cannot note so accurately. But they have certainly played a part in the smashing of the German will to war.



This "Safe Conduct Pass", dropped behind German lines to encourage surrenders, pictures happy Germans moving down a mess-line with the label, "Dinner in an American camp for prisoners."

This happy airman emerging safe from his blasted Liberator was photographed before V-E Day; but he shows how thousands of airmen doubtless felt.

The far-ranging

15TH

by Herbert Jeffrey Harmatz

LATE in March of 1945, the War Department unpretentiously announced, "It can now be stated that at this moment no gasoline is being produced at any of the known German refineries in the operational zone of the 15th Air Force."

The statement, of little significance to the average civilian, signalized to high-ranking military strategists the near collapse of effective German resistance. It was also a testimonial to the work of one of our least publicized Air Forces—the 15th. By destroying Germany's highly productive Romanian oil fields and refineries, the 15th had severed the bloodstream of the vaunted Nazi legions. The work had taken less than two years.

The 15th was activated November 1,

1943, as a direct result of Allied discussions at Casablanca. Under the command of Major General Jimmy Doolittle, since promoted to Lieutenant General, it immediately set about a campaign of destroying German industrial targets throughout Austria, the Balkans, Northern Italy, Southern Germany and the Mediterranean coast of France.

Some of the Liberator men later assigned to the 15th did receive one great accolade, when they first bombed Ploesti in early 1943. Ploesti was Hitler's source of at least a third of Germany's oil and gasoline. Its destruction was therefore vital. The first Ploesti mission, in 1943, was staged from bases we had seized in North Africa, and Liberators from the 8th flew down from England to Africa to join in the hazardous assault. Then, after our occupation of Italy, the 15th moved up to bases on the Italian Peninsula – there to be stationed for the duration, and thereafter to be almost ignored by those who were primarily excited over the bombing of Berlin.

To those familiar with Italy only through pre-war tourist literature, an Italian base there might sound like a romantic place to be. Actually, the 15th found itself wading in mud for weeks at a time; shivering through the Italian winter; and struggling to make itself decently comfortable in the midst of an Italian people desolated equally by war and the retreating Germans, who had picked their allies clean.

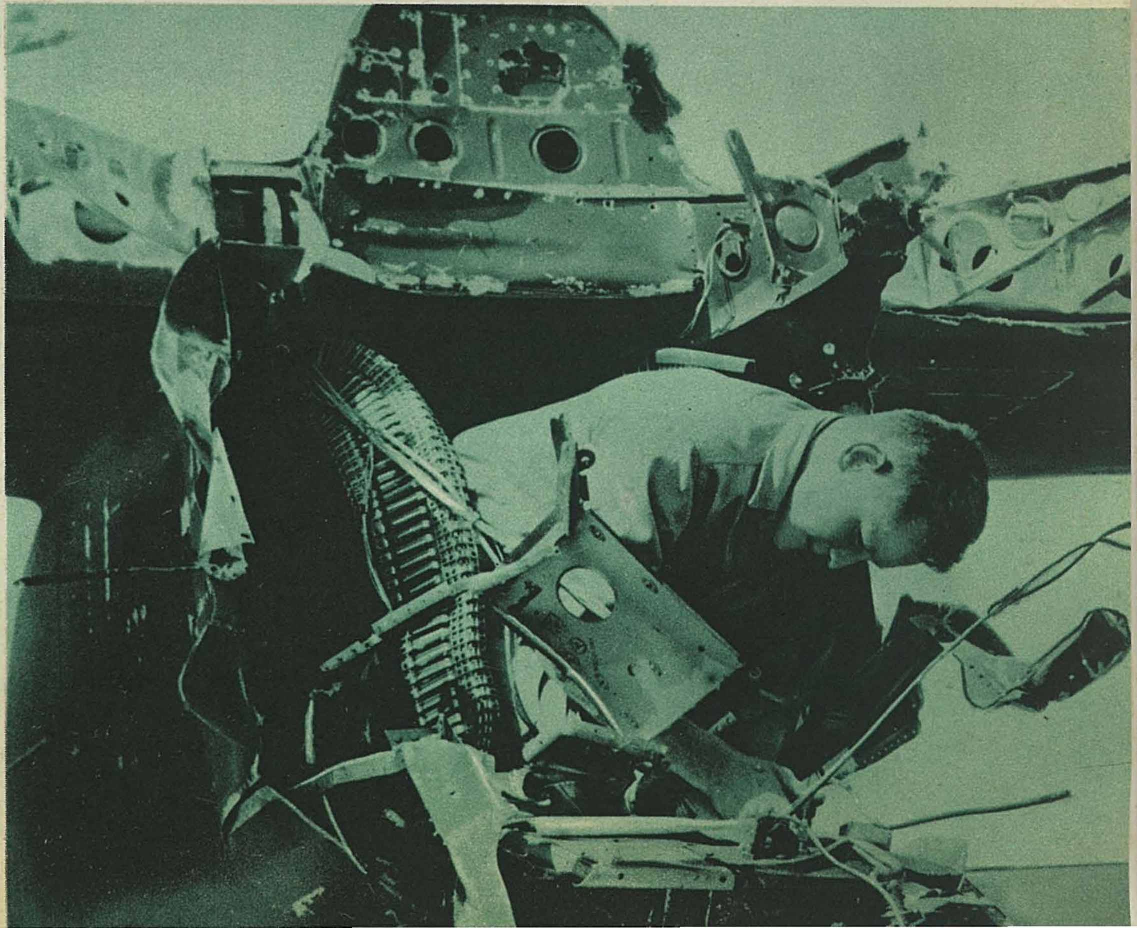
The 8th Air Force in friendly England was, by contrast, in the midst of clover. The 15th had one other cross to bear – it was outside the areas that were most closely covered by news correspondents. Its work was just as hazardous as the exploits of the other Air Forces. Many of its missions were far wider in range—one reason for the many Liberators assigned to it, for these had the range required.

But its heroic exploits often got desultory mentions in the press while other Air Forces were making the headlines.

What was true for our Air Forces in Italy has applied also to our ground troops there, who were fighting a bitter campaign while the public focused its eyes on the conflict in other theatres. The famous Mauldin recorded real soldier feeling when he cartooned two GIs arriving on the German scene to tell another already fighting there, "We come up from Italy to get some public-

An unusual inside shot of a Liberator crew of the 15th returning safely from a long mission.

Damaged Libs like this are being repaired by expert ground crews – will fly against the Japs.



AAF Photo

Liberator men in Italy did not find it romantic. They waded in mud, shivered in Italy's cold.

AAF Photo

This April bombing of rail yards near Vienna was one of the 15th's last strikes of the war.

Below, you see how the 15th had to pry bombs out of the muddy earth in Italy's rainy season.

AAF Photo

ity." Soldiers humanly tend to believe that their country values their efforts in direct ratio to the news it accords them in the newspapers back home. This is doubtless a misapprehension. But it helps explain to civilians why fighting men naturally watch the headlines.

The 15th has deserved them. In the twelve-month period ending November 1, 1944, the 15th's Liberators, Flying Forts and long-range fighters flew more than 150 million miles and dropped 200,000 tons of bombs on 620 targets scattered throughout 12 different countries. In coordinating its assaults with those of the 8th Air Force flying out of Britain, the 15th attacked almost every crude and synthetic oil refinery in German-occupied Romania, Hungary, Czechoslovakia, Yugoslavia, Northern Italy and Southeastern Germany.

Following the fall of Ploesti and the completion of the Romanian oil campaign, the 15th was assigned the task of destroying synthetic oil plants located in Silesia, Poland and Northwestern Czechoslovakia, cutting their production by an estimated 80 per cent. The outstanding success of "blind bombing" techniques, developed by the 15th to overcome weather conditions which prevented visual bombing, caused General Spaatz to praise the 15th as the "world's leading exponent of blind bombing."

Thanks largely to this heroic work, motor vehicles all but disappeared from the streets of German cities long before our crossing of the Rhine; street cars were being used to haul freight; and German roads and fields were littered with abandoned motor vehicles, armored units and aircraft with empty fuel tanks. As General Ira C. Eaker put it, "The immobility of the enemy's armies, owing directly to lack of fuel, enabled the Allies to convert the original break-through in France into a disaster in which the enemy lost a major portion of his armies."

In one sense, the airmen of the 15th have had the most cosmopolitan experience of any of our flyers — they are among the privileged few, for instance, who have flown into Russia. It was their so-called shuttle bombing which took them there, when long missions over the Balkans made it desirable to have a refueling base on Russian soil. This bombing of Balkan objectives that were vital to German defenses did much to speed the ultimate Russian march to Vienna.

On these shuttle missions the 15th's bombers, escorted by fighters, would fly to Russian destinations bombing Hungarian targets en route. From the USSR, they would assault air bases on the lower Danube; then, on their return trip to home bases in Italy several days later, they would continue bombing and strafing attacks against Romanian airdromes. The success of such attacks by the 15th Air Force led to later inauguration of a three-way shuttle which included 8th Air Force bombers based in Britain. By October of 1944, the Russians in their drive to Budapest were able to overrun about the entire area.

Meanwhile, the 15th was also assisting the Partisan forces of Marshal Tito of Yugoslavia, by making heavy bomber and fighter attacks against German troop concentrations, ports, rail lines and bridges. Supplemented by the RAF, the 15th dropped supplies, food and equipment by parachute to the hard-pressed Partisan fighters, who thereafter gave evidence of regarding Americans as among their stoutest friends.

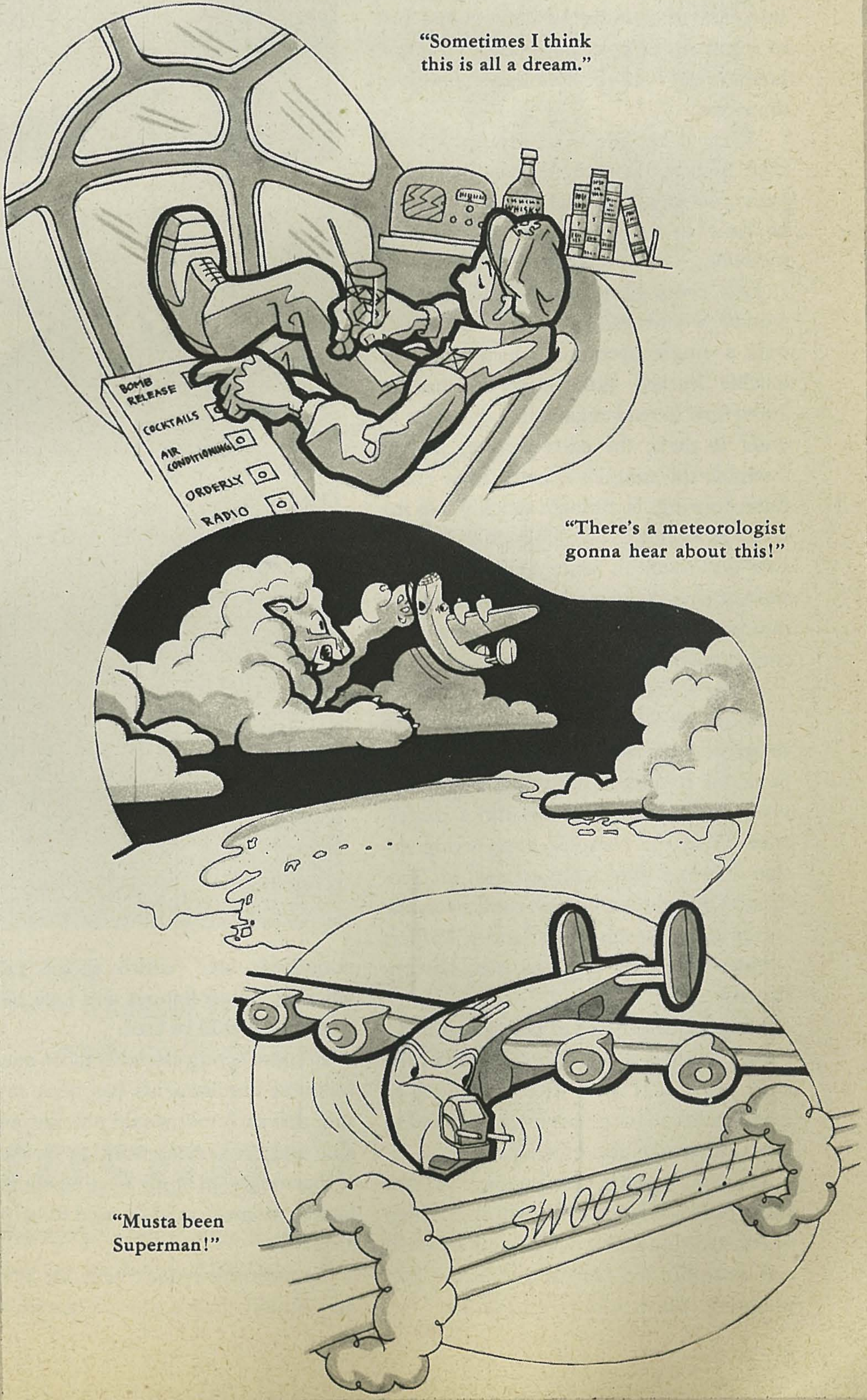
One dramatic outcome of these operations was the liberating and evacuation of almost 1,500 American airmen who had been held as prisoners of war. More than 1,000 American crew members were rescued from Romanian prison camps. An additional 342 were brought out from Bulgaria. The 15th flew these men out in gigantic evacuation operations, and made them the happiest airmen in Europe.

By March of 1945, when the men of the 15th had wiped out most of its Balkan objectives, they flew their great bombers on record 1,600-mile round trips northward, to join in the assault of Berlin—meeting there our other bombers flying from Britain.

Thus the 15th Air Force accomplished smashing victories in its own specific operation area and by its successful oil campaign helped thwart the enemy's war effort in every other theatre. While it has been only an integrated cog of a vast allied air war, its strategic achievements stand out as some of the most extraordinary in this war's use of American airpower, to be remembered long after the last signature was written on the surrender documents in May of 1945.

Lib-Looney

The average airman tends to regard his plane as an almost animate piece of machinery. Lt. Sanfrid E. Odhner is being humorous in these Liberator drawings, but there's human truth here, too.

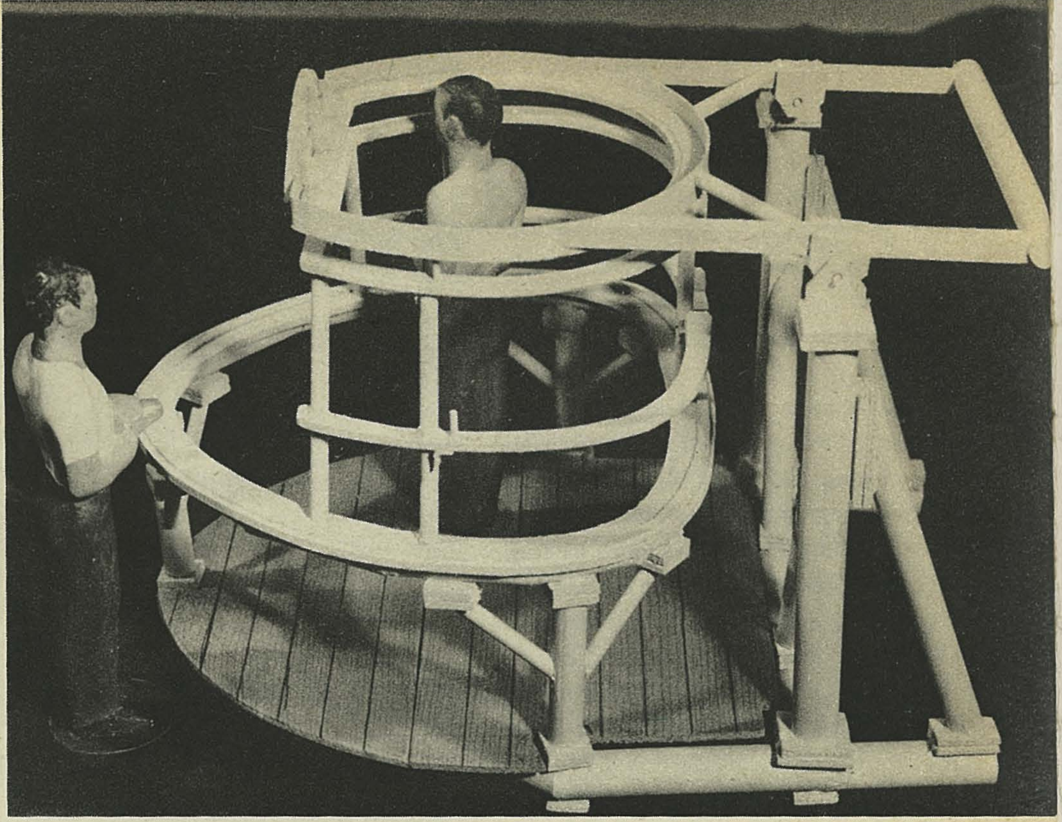


"Sometimes I think this is all a dream."

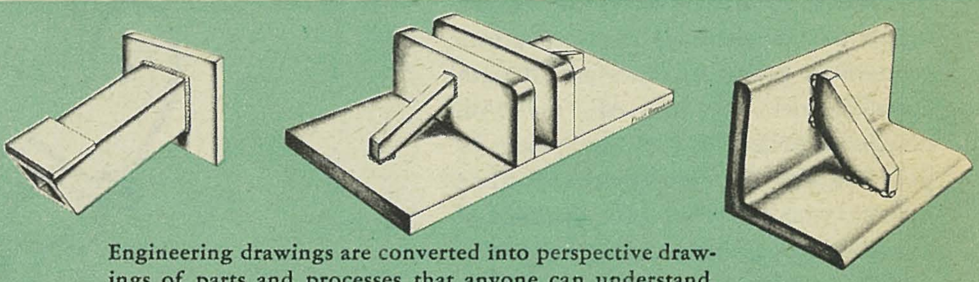
"There's a meteorologist gonna hear about this!"

"Musta been Superman!"

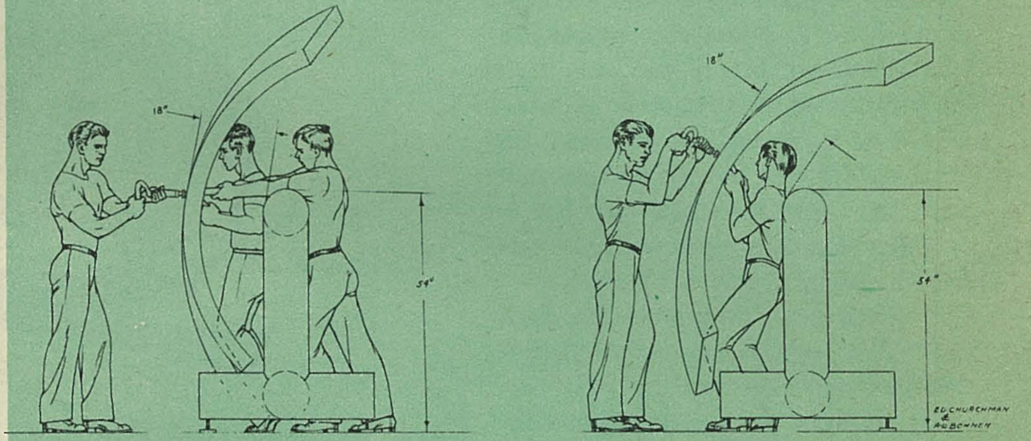
Art FOR PRODUCTION



Above is an example of actual scale models created by artists for proposed jigs and fixtures.



Engineering drawings are converted into perspective drawings of parts and processes that anyone can understand.



IN an aircraft factory, drawings are the medium used to convey engineering information to the assembly lines. Before the war, new aircraft workers sometimes had to spend weeks at school in order to learn how to read even the simplest engineering drawings.

When it became necessary for the aircraft industry to hire thousands of inexperienced men and women, much had to be done to simplify traditional working methods.

36 64

First, every job was simplified, so that a worker would generally have to master only a single operation which could be quickly learned. Still, *somebody* had to know how to read engineering drawings in order to make the parts patterns and to assemble the completed parts. How could these drawings be brought quickly into the range of workers new in aircraft? The answer was found in hiring skilled commercial artists, to convert engineering drawings into pictures with perspective, that anyone could understand.

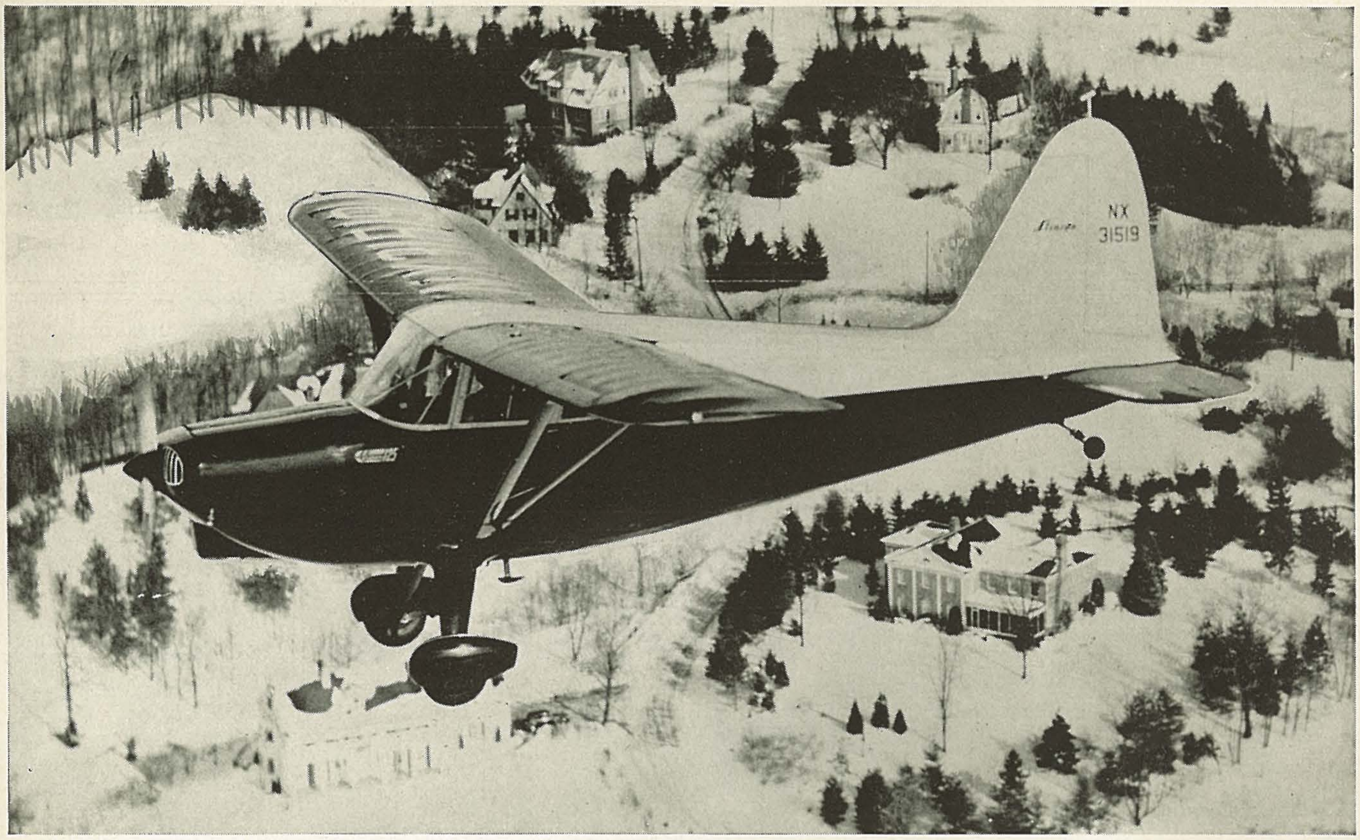
A few of the thousands of "perspective" drawings used at Consolidated Vultee are shown here. As soon as the engineering department completes plans for a new airplane, the artists are called into a conference. From the complex engineering design drawings they make up a set of "production illustrations" which show everyone —even the most unskilled factory workers — exactly how the airplane is to be constructed.

Such drawings have to be extremely accurate. Every nut and bolt must be in the right position. If some trick is required to make an installation, this must be noted in readable form on the drawing.

General drawings are also made, so that factory officials can visualize the overall job of constructing a new airplane. When special assembly tools are required, the pre-planning illustrators also prepare "arrangement art," which shows precisely what the jigs or fixtures will look like, and how they should be used.

In constructing assembly tools, one of the foremost requirements has been to make sure that each tool would provide comfortable and convenient working conditions— so that even aged or physically-handicapped men or women could be used to help build airplanes.

To meet this requirement, the pre-planners usually draw scale-size human figures on their tooling illustrations. Recently they found an even better method, one suggested by V. A. Petricola, general supervisor of tool and operations planning at San Diego. In this method, actual scale models of humans and tools are built for each proposed jig or fixture. To the ordinary reader, this may sound like an expensive undertaking. Actually it is an economy measure, saving the cost of building real tools which might be scrapped and replaced before they have served their purpose.



Count on Stinson

FOR LEADERSHIP IN PERSONAL PLANES!

86 64

For 19 years Stinson has been a leader in personal aviation.

The first Stinson built, back in 1926, was a plane ahead of its day. It was the first plane to combine in its design an enclosed cabin, wheel brakes, electric starter, and cabin heater.

Constant improvements in design and performance have enabled Stinson planes to show an enviable record in the 19 years of Stinson history.

A Stinson was the first to fly from Detroit to Tokyo, and from New York to Bermuda. Stinsons carried the first air mail in China, Mexico, and in the Philippines. They provided the first air-mail pick-up service. And planes built by Stinson were first to explore the Greenland route to Europe.

Pearl Harbor found Stinson ready to turn out quality planes in quantity for our armed forces.

Wherever our men are fighting, the Stinson Sentinel L-5, or "Flying Jeep," is a familiar and welcome sight. The sturdy Stinson planes serve as "air eyes" for the armed forces, parachute supply planes, flying ambulances, and liaison planes.

The New Stinson Voyager 125

The Stinson Voyager 125, shown above, is the personal plane that we will make as soon as war conditions permit.

Powered by a 125-h.p. engine, the Voyager 125 carries pilot and three passengers. It has a cruising range of 580 miles, a rate of climb of 670 feet per minute at sea level, and a service ceiling of 13,800 feet.

The Voyager 125 has a maximum speed of 128 m.p.h. and cruises at 116 m.p.h. It takes off after a run of 550 feet, lands with a roll of 280 feet.

For full information about the Voyager 125 and free, illustrated brochure, write to Private Sales Director, Stinson Division, Consolidated Vultee Aircraft Corporation, Wayne, Mich., U.S.A.

Stinson

The Aircraft Standard of the World

DIVISION—CONSOLIDATED VULTEE AIRCRAFT CORPORATION, WAYNE, MICHIGAN, U.S.A.

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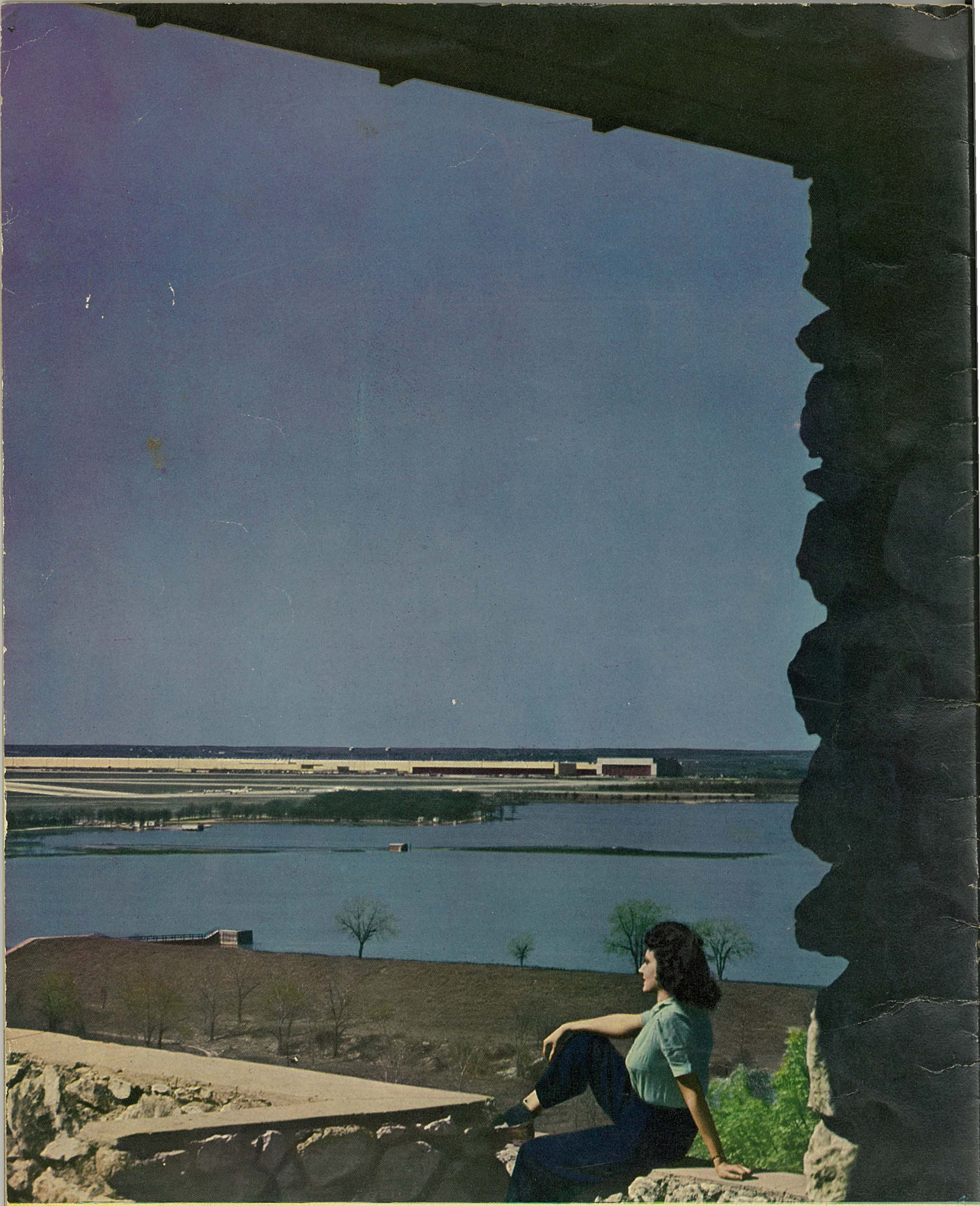


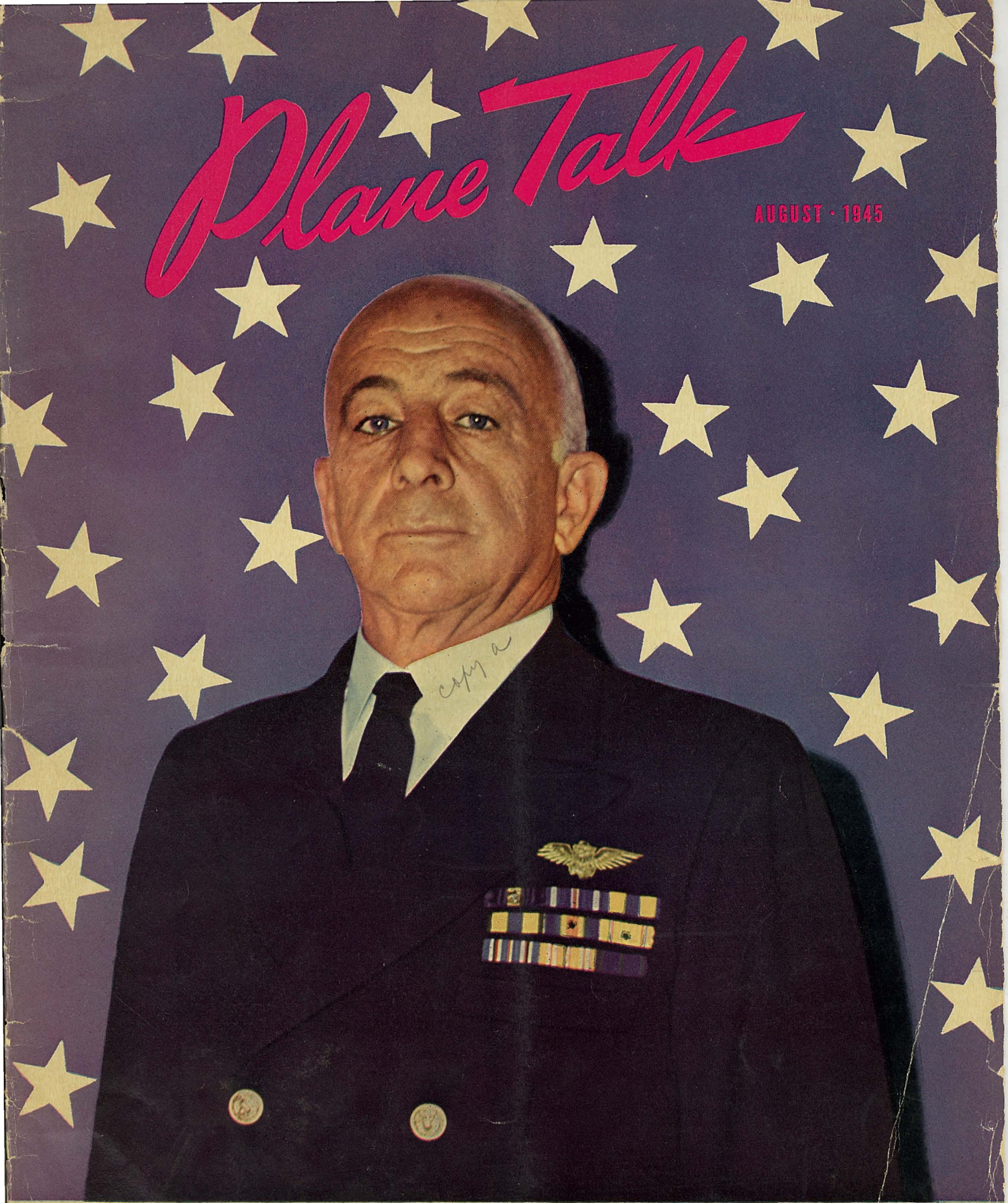
Kodachrome by Fred Carlile and Duke Burgess

THE FORT WORTH PLANT OF CONSOLIDATED VULTEE

Four fifths of a mile long, and the largest air conditioned industrial building in the world, the plant is viewed here from a vantage point across Lake Worth, through the framework of Inspiration Point Pavilion. Designed and built by the Austin Company of Cleveland, it has been called "a spectacular example of new industrial architecture". At a time when production schedules on many older planes are being cut, this Consolidated Vultee plant is rushing production of the new Dominator (B-32) for the Army Air Forces.

Plane Talk

AUGUST · 1945



copy a

Vice Admiral Aubrey W. Fitch, who was Deputy Chief of Naval Operations for Air until July, when he was appointed Superintendent of the Naval Academy at Annapolis and Commandant of the Severn River Naval Command.

The Planes of Tomorrow—by I. M. Laddon • Till the Boys Come Home—by Fred B. Barton
The Coming Boom in Air Transport—by W. C. Wold

Plane Talk

If you wish to share your copy of Plane Talk with a soldier in the war theatres, 1st class postage is required (15¢). You may re-use the envelope in which your copy comes to you by pasting on a label addressed to the APO number; seal the envelope. The magazine may be mailed, unsealed, to a U. S. A. address for 3¢.

AUGUST, 1945 • CONTENTS • VOL. III, No. 4

PUBLISHED BY CONSOLIDATED VULTEE AIRCRAFT CORPORATION

With this issue Plane Talk *becomes a quarterly, the next issue in 1945 will be dated November.*

Our Cover

Vice Admiral Aubrey W. Fitch, who became Deputy Chief of Naval Operations for Air on August 1, 1944, is a flying Admiral. He had his flight training at the Naval Air Station in Pensacola, Florida, and was designated as Naval Aviator in February of 1930. As Deputy Chief of Naval Operations for Air, his has been the responsibility of commanding the Navy's Air Forces.

In July of 1945 Admiral Fitch was appointed head of the United States Naval Academy at Annapolis, where he will undoubtedly play a large part in shaping the future destiny of America's naval air and sea power.

The appointment is indicative of the growing importance which the Navy attaches to the operations of its Air Arm. This is the first time a Vice Admiral has become Superintendent of the Academy; heretofore the appointment has always gone to a Rear Admiral.

Admiral Fitch's portrait is reproduced from an official U. S. Navy kodachrome.

Post-War Aviation

With the closing of the European war, and the growing concentration of all our forces in the Pacific, we can already see clearly how that war is to be won, however uncertain the timing of victory.

Hence news about post-war civil aviation is taking on ever increasing importance. A large part of this issue of Plane Talk *is devoted to plans that Consolidated Vultee has actively in hand, to provide the most comfortable and efficient planes for civilian travel this nation has ever seen.*

Three articles dealing with developments of the near future are of special importance. "The Planes of Tomorrow", by I. M. Laddon, who is Executive Vice President of Consolidated Vultee, tells you the outlook as seen by one of the nation's greatest designers and engineers. "Stinson Means Business" tells you about the new line of airplanes that the company's Stinson Division will make, to meet every need of personal flying. "The Coming Boom in Air Transport," by W. C. Wold, reports on the speed, economy and comfort of the air transport that will shortly be offered you.

The Planes of Tomorrow

I. M. Laddon, Executive Vice President of Consolidated Vultee, speaks as one of America's greatest aircraft designers and engineers **1**

Stinson Means Business

The Stinson Division of Consolidated Vultee is confidently preparing for a great post-war increase in the use of the personal airplane **4**

How General Patton Flew His Jeeps

Everybody knows he is a great leader of men—but few know the story about his airmanship that William B. Mellor, Jr., tells for us here **6**

The Coming Boom in Air Transport

W. C. Wold, who is in the Commercial Sales Department of Consolidated Vultee, gives some vital facts and figures that may surprise you **8**

Applying Our Experience to Japan

Captain Arthur Settel summarizes the achievements of our Air Forces over Europe, and applies recent history to our Far East problem **12**

Strike at the Life Line

Lieutenant Dwight Shepler, official U. S. Navy Artist, shows the Navy's air blockade at work in a Liberator strike against a sub **16**

A Liberator De Luxe

Probably few Liberators will be given post-war trimmings—but here is one to surprise every combat crew who ever flew one **18**

Finding the Way

Lieutenant Robert M. Lambe describes what the Army Airways Communication System does, and how it works for the Navy, too **20**

Till the Boys Come Home

Fred B. Barton, winding up his series of reports on our Air Forces in Europe, tells how the men still there await their redeployment **24**

Gas For China

Lieutenant Rus Walton reports on an Indo-China flight of the C-109, which is a Liberator specially fitted to transport gasoline **27**

What a Pilot Feels

Captain Thomas A. Reiner puts into words some emotions that many airmen, not so articulate, find it hard to express clearly **29**

Airmen Taken Prisoner—*a two-part report*

The Germans Told Us, by Lieutenant A. T. Waddingham, A.C. **30**

We and They, by Felice Crainianu, of the Rumanian Red Cross **31**

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WITHDRAWN

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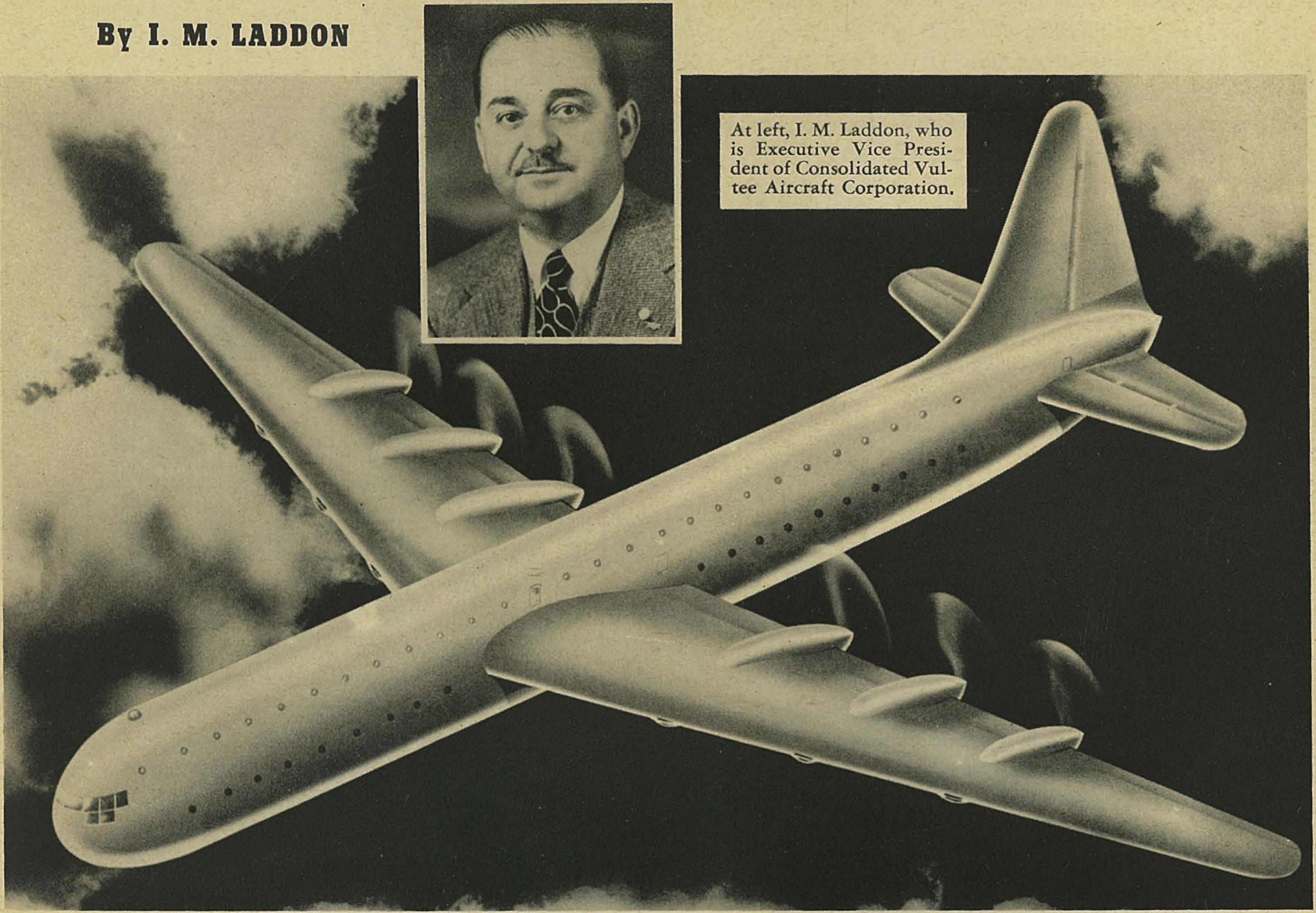
THE PLANES OF TOMORROW

By I. M. LADDON



At left, I. M. Laddon, who is Executive Vice President of Consolidated Vultee Aircraft Corporation.

Above is a drawing of the biggest land-based troop carrier in the world, now under construction by Consolidated Vultee for the Army Air Forces. Called the XC-99, this six-engine ship is a transport version of the luxury liner pictured on Page 9. Both have a wing-spread of 230 feet, are 183 feet long. As a cargo plane, the XC-99 will carry a payload of 100,000 pounds 1,500 miles, with lesser payload can travel some 8,000 miles.

WHEN the Wright Brothers flew the first powered airplane a little more than 41 years ago, they got off the ground in what was appropriately called a flying machine. That was all it was. A machine that flew.

From that small beginning, the airplane has developed into a mode of transportation. Everything done since then in the way of engineering and operations has been aimed at just one primary objective: to make the flying machine a more efficient, and therefore more *economical,* means of transport.

Economical transportation is the result of a balance between load, speed and cost. What is happening to the design of the commercial airplane is comparable to what happened to the automobile.

For instance, the race cars at Indianapolis have just one job: to circle a 2½ mile brick track at high speed. Load carrying ability is not important. Neither is the cost of the operation. If a driver can get a car speedier than any other car on the track, he has achieved economical transportation in terms of auto racing, for he comes in first and wins anywhere from 35 to 40 thousand dollars.

But if that same driver then decided to take a contract for hauling bricks with his racing car, he could not deliver economical transportation in terms of commercial trucking.

What automobile manufacturers have done with the motor car, we have begun to do with the airplane. We are designing in terms of function. We are rapidly making present models obsolete.

Military aircraft are already demonstrating the great diversification that the airplane of the future will amplify. Here again we are faced with the question of building not a cheap plane, but one economical in the fullest military sense.

Since no one can measure the cost of losing a war, the military simply asks the aircraft industry to produce a better plane for each special purpose than any other nation is flying; and to produce it in equal, or greater, numbers.

As the war has progressed we have seen

certain ships specially designed for dive bombing, other ships for low level bombing, still other planes for high level bombing.

Fighters also have become specialized. In the maelstrom of actual combat, all of these planes have performed other types of work. But primarily each military plane is designed today for a specific job, and gives maximum performance on that job.

When it comes to obsolescence, the military plane is even more subject to competitive deterioration than are commercial models.

FROM the standpoint of design engineering, the form of the airplane has been reasonably well stabilized for the past ten years, except as it has been marred by military requirements.

In design, we have dealt with four elements: a fuselage, a wing, an empennage or tail, and a power plant.

We have improved the design of each; we have improved the interaction of each with the others or decreased and minimized their mutual interference. But we haven't discarded any of these on a practical basis.

True, experimental "flying wings" have been built and flown—planes that discarded the tail—and they have achieved a measure of stability.

But the cost has been high. Part of the price paid is in the necessity to more or less freeze the center of gravity. In the "flying wing" you can't carry a mobile load. For either cargo carrying or passenger transport, this is a serious handicap.

The Liberator, for instance, is reasonably stable—that is, it can be flown and controlled within a range of 20 per cent of the average wing chord. This means that you can shift your load around somewhat, if you are carrying cargo, and still handle your plane.

Or, if you have passengers, they can make necessary trips aft occasionally without causing the pilot serious trouble.

But in a "flying wing" everything has to stay put. Small boys, for instance, would be a difficult problem in a "flying wing."

There remains another fundamental about an airplane that we have to remember.

We think of an airplane, for instance, as an air machine. That is only partly true. The airplane is also a land or a water machine. During take-offs and landings the airplane is earthbound.

An airplane then is really a two-element machine. Ground and air.

This matter has an important bearing on design. Primarily we design a plane for optimum performance in the air. But we also have to put on landing gears, and design airfoils and flaps.

Flaps are used on landings and take-offs to augment our lift and increase our drag. Then, when we are airborne, they are retracted to reduce our drag and increase our cruising speed. By means of wing flaps, and various other means of temporarily changing our airfoil, we are able to satisfy both the earth bound and the airborne requirements of design.

To these requirements "something new" is about to be added. I think we may soon have to redesign our airplanes in terms of "sonic and super-sonic" speeds.

I am afraid this is where the trouble starts. For no one, not even among today's aeronautical research engineers, knows for sure what happens when an airplane gets into the speed ranges known as "sonic" and "super-sonic."

All we know certainly at this time is that when an airplane gets into the sonic speed ranges it may take a physical beating for a number of technical reasons. We think that if it could pass into the super-sonic speed range, conditions of reasonably stabilized flow would again prevail.

WE shouldn't have to worry much about these very high speeds except for one factor. After being powered by a reciprocating engine for its entire life span of slightly over forty-one years, coasting more or less comfortably along all this time at sub-sonic speeds, the airplane has suddenly acquired a new type of power plant. This is the gas turbine driving a propeller . . . or the gas turbine operating as a jet propulsion unit.

With this new type of motive power we can attain much higher speeds economically than we could with the reciprocating engine. These speeds offer new problems of aeronautical design. It is likely that the wings on the new airplanes will be much thinner than we now use, and will have sharper leading edges.

In the loft department at San Diego, Consolidated Vultee engineers make full-scale drawings for the parts of a new military airplane.

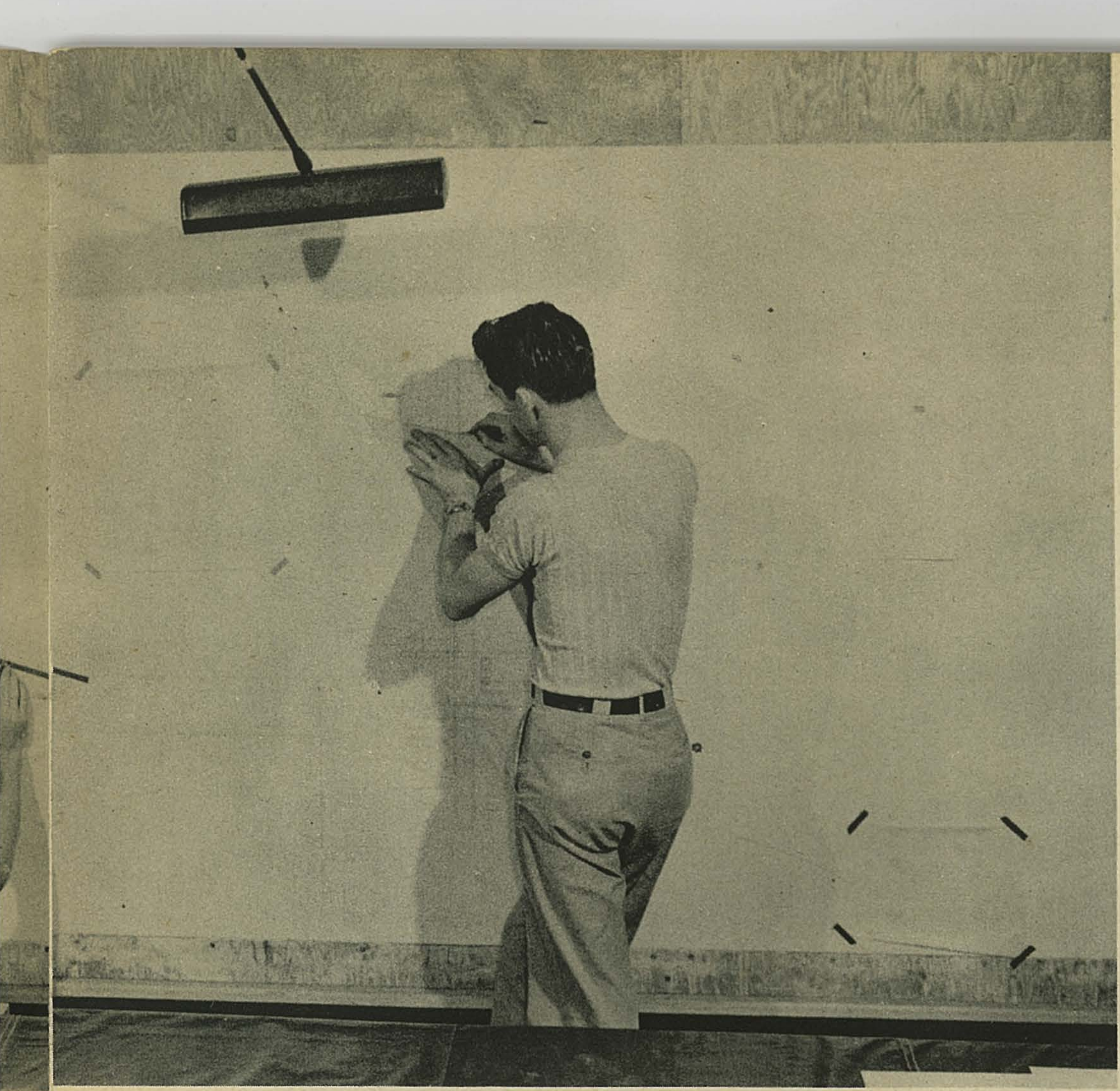
When an airplane approaches sonic speed—so-called because it is the speed of sound—strange new problems arise.

While the airplane is flying at today's ordinary speeds, the air flows over and under the wing, around the fuselage and tail, and around the tips of the wing. The flow in general is fairly smooth. If you will think of a boat displacing water at moderate speeds and creating bow waves and stern waves, you will have an analogous picture. The airplane creates many similar waves as it parts the air by being pushed or pulled through it.

Now as long as we fly at sub-sonic speeds this parting and flowing of the air around the aircraft proceeds on a fairly nice and even basis.

But when we begin to approach the sonic speeds we meet a new phenomenon. Instead of the air parting and flowing around the wing, some of it piles up. You can at least *think* of it as piling up out in front, being pushed along.

For those who have had experience with boats, it may be helpful to translate what happens to the airplane approaching sonic speeds into what happens to a displacement boat in the water at relatively slow speeds.



As you know, this piling up action of the water at the bow of a displacement boat begins at very low speeds, and becomes substantial at speeds from 25 to 40 miles an hour, depending upon the lines of your hull.

In hydrodynamic terms this is called the hump. The drag, which starts out by rising gradually, suddenly increases radically as we increase speed. To get only a little more speed, we have to pour in a much larger amount of power.

What is happening is this: the faster we go, the larger the wall of water we are pushing ahead of us and the greater our drag.

Now you who have had flying boat experience know that when we reach the point in our take-off where the drag on the hull is building up fast, we gun the engines and rock the controls a little. By doing this we break through the hump and begin to plane.

We don't know to what degree this analogy holds so far as air is concerned, but we do believe there is some similarity. The early effect is the same in each case—an accelerating increase in drag that appears to extend into infinity.

In the air, from zero miles an hour to speeds below the sonic range, the increase in the drag of our plane has gone up on a smooth easy slant. But when we approach the sonic speeds, that slant suddenly goes up in a sharp curve.

The effect, when you are flying a plane, is described as being like that of hitting a brick wall, and the turbulence of the air buffets our plane violently.

Now no one has yet taken an airplane through this sonic speed range, which is called the "area of compressibility." But we have fired rockets and projectiles that have gone through it and into super-sonic speed ranges.

A rifle bullet and the V-2 rocket bombs, for instance, both travel at speeds much higher than that of sound.

How we are going to get an airplane through that sonic speed wall and into the super-sonic speed ranges, where conditions will get back to a predictable normal, is something we have not solved yet.

We are making experiments in wind tunnels, but for technical reasons they are not entirely satisfactory. It is possible that we shall do our first experimental flying in the sonic speed ranges with pilotless radio controlled planes that will register their instrument findings on the ground.

All of this may seem rather technical, even though over-simplified, but it deserves mention for a most important reason. It shows that progress in the design and production of aircraft is not ending, but just beginning.

We have a practically new industry on our hands today. The excitement of pioneering, the satisfaction of helping to find the answers to new problems, has returned to the aircraft business.

I myself have been in the airplane business almost 30 years. I expect to have more fun building airplanes in the next ten years than I have had in the past 30. The challenge of the unknown in designing and building aircraft was never greater than it is today. The fun is starting all over again.

The gas turbine engine that is forcing designs for super-sonic speeds upon us heralds other changes, too.

For one thing, we are going to have much less vibration in our gas turbine airplane than we have with today's reciprocating engine airplane. That not only means more comfort for the passengers, it also means we can cut down the weight of our airframe and increase the payload.

In addition, we expect the gas turbine to deliver more horsepower per pound of weight than we get out of a reciprocating engine.

Further, the gas turbine operates most efficiently at about 85 per cent of the rated, or maximum, horsepower of the engine—whereas our reciprocating engine operates most economically at about half its rated horsepower, requiring us to use full power for take-off and climb, and then cut back to half throttle for economical cruising.

This means that in a gas turbine engine we don't have to carry extra weight around to get economical high operating speeds.

I don't think anyone knows how far we can go to improve the efficiency of the gas turbine. The engine is too new to say definitely what it will or will not do.

Today we have reciprocating engines that are delivering one horsepower per pound. What we have done with reciprocating engines in reducing weight per horsepower we can hereafter expect to do with gas turbines, which already weigh less than 1 pound per horsepower.

Such new developments in aircraft design and production will make it possible to build great commercial air fleets such as we never knew in pre-war years. And these same developments will make our present military air forces obsolete in five years.

STINSON

Means Business

As the needs of the Army Air Forces decline (Navy demands are still heavy) the Stinson Division of Consolidated Vultee is swinging into the exciting business of planes for personal transportation.

Before this year is out, its new Voyager 125 will be coming off production lines, as the first of a complete line of five different models to meet different flying needs.

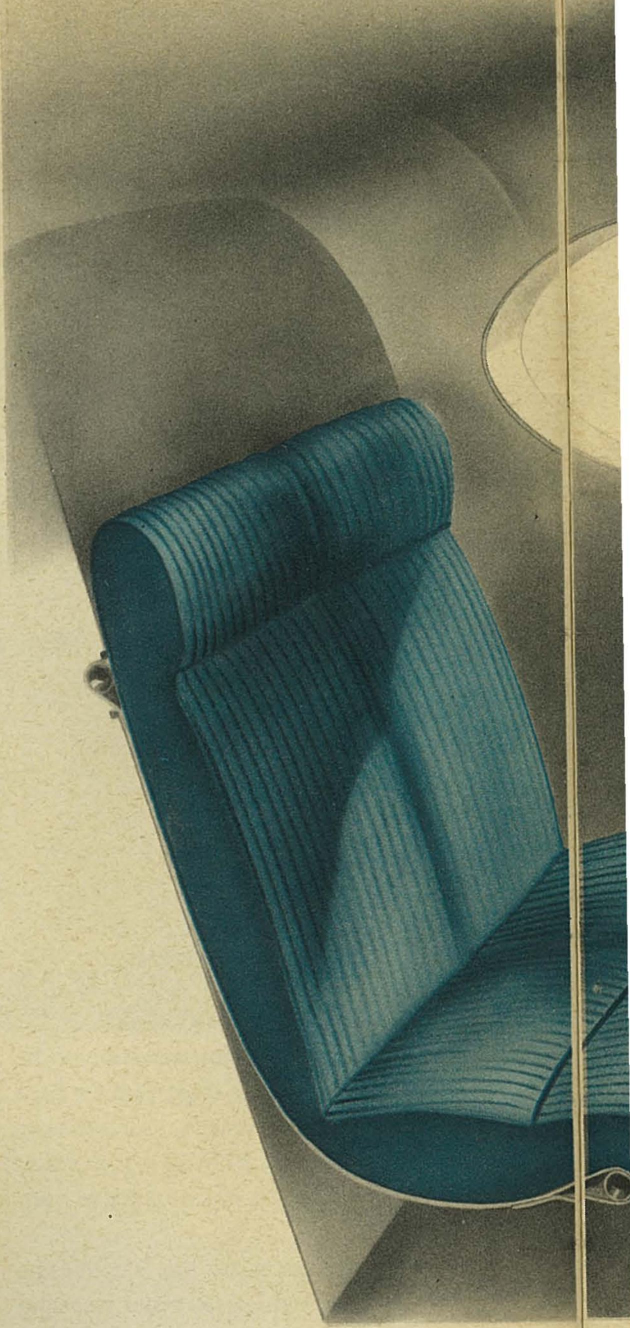
This line has been planned to give dealers a range of planes that will reach from a two-place plane of low cost to a junior executive transport with twin engines that will carry five or six persons.

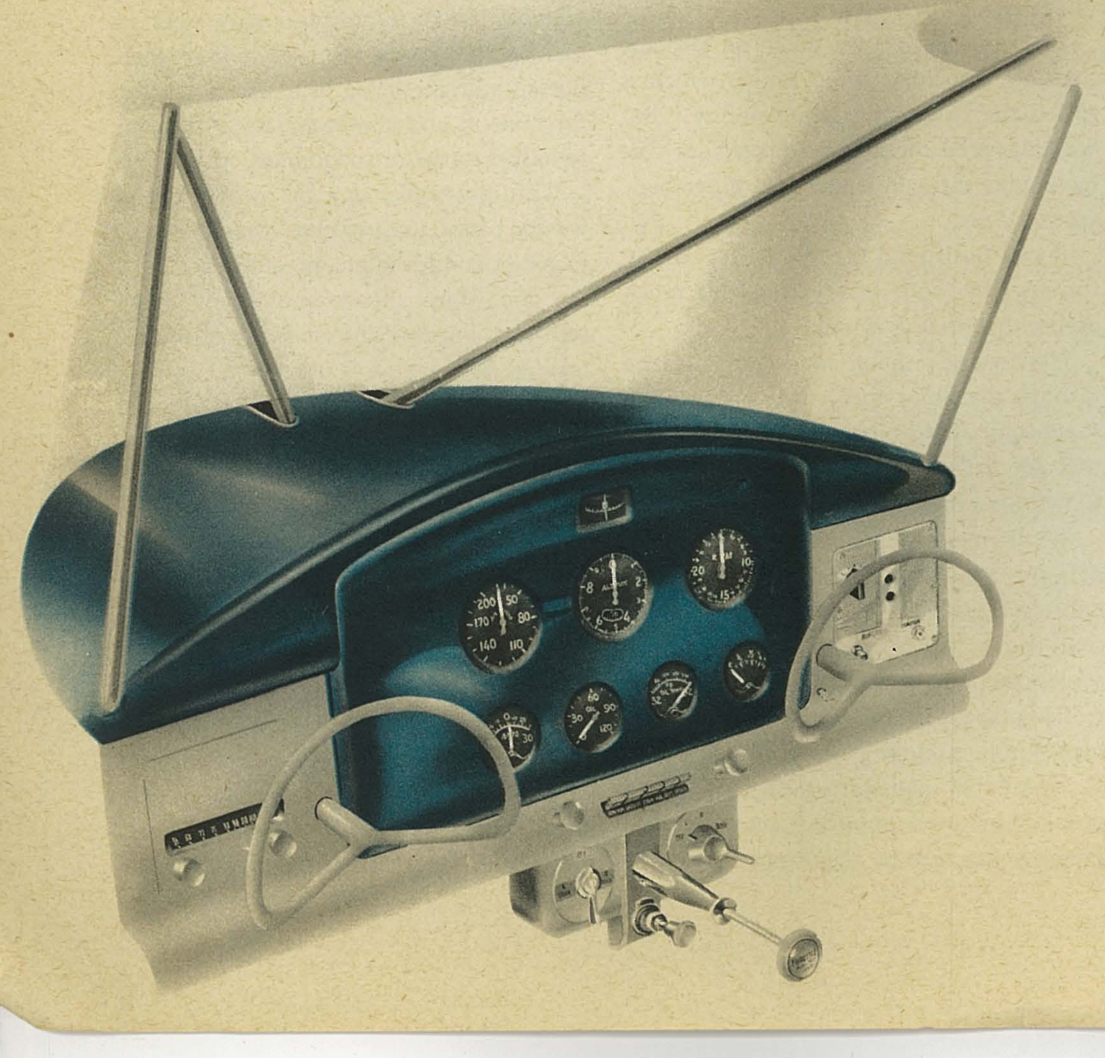
In addition to the four-place Voyager 125, for which specifications have already been announced, Stinson will offer (a) a two-place plane, low in cost, designed for short cross country hops and instructional flying; (b) a three-place plane for more versatile flying; (c) a five-place plane, to be known as the Sky Coach, designed as an ultra modern high speed "plane of the future"; and (d) a twin engine plane which will carry five or six people as a junior executive transport, and will have a performance comparable to that of present airliners.

The purchasers of Stinson planes will find Stinson service available wherever they want to go. Every authorized Stinson dealer will be a repair and service representative for the company's products; and plans are under way for creating a dealer organization that will make the servicing and repair of Stinson aircraft as simple as the caring for the family automobile.

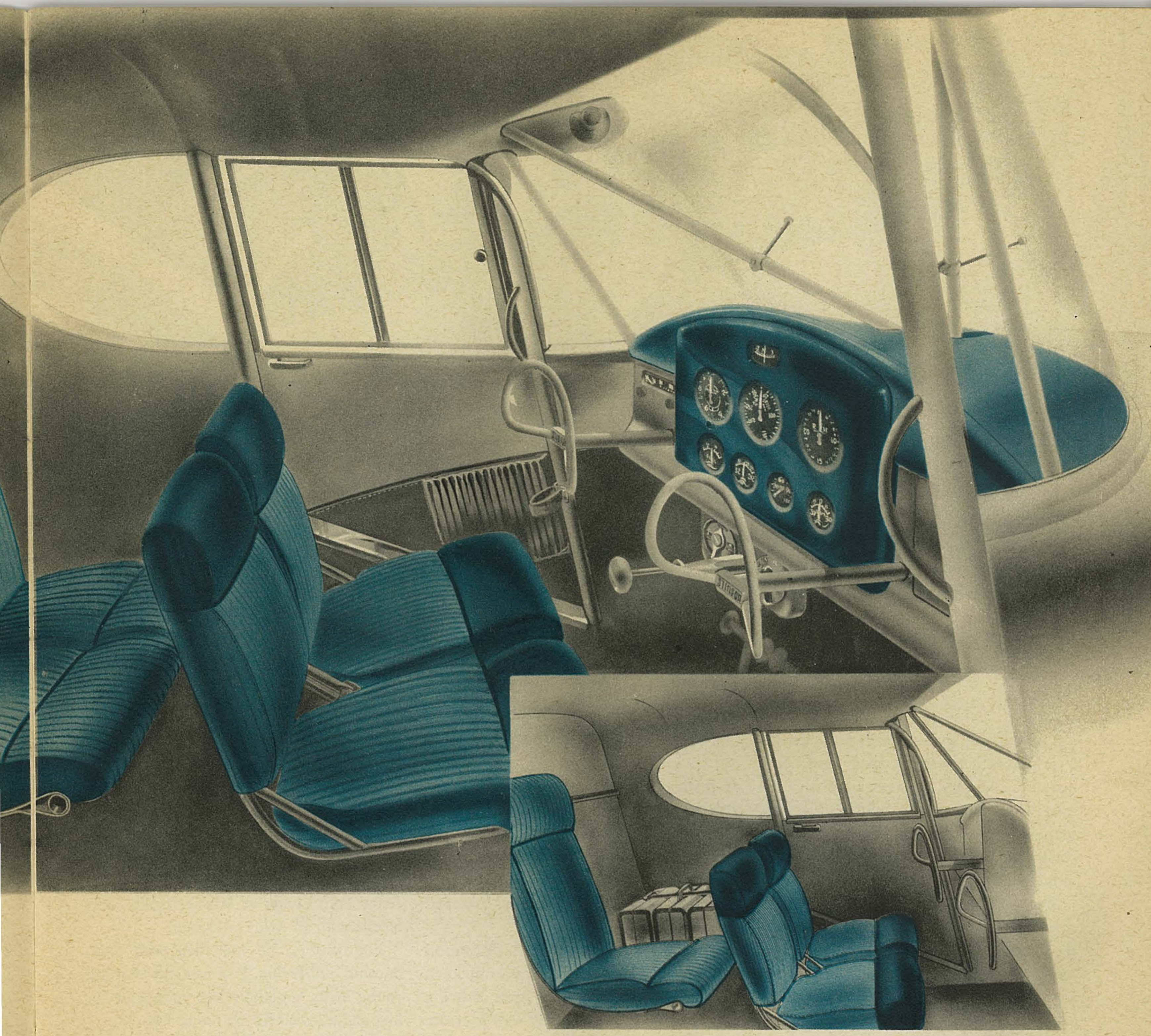
Under the "Stinson plan" being made available to dealers, plane parts, instruments, etc. are all standardized, to simplify their procurement and assure a constantly available stock. In planning its new dealer and distributor organization, and designing its dealer and distributor contracts, it has been Stinson's aim to create a merchandising set-up that would attract men who are outstanding in ability and enterprise.

Many dealers who sold planes successfully before the war, and who expect a large increase in business in the years just ahead, have been interviewed by Stinson representatives to ascertain their own ideas of what the buying public will want. They tend to rank the factors creating sales ap-





◀ Left: The instrument panel of the Voyager 125.



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The new Stinson Voyager 125 provides limousine comfort for three or four passengers, plus ample room for baggage. The plane is now in production.

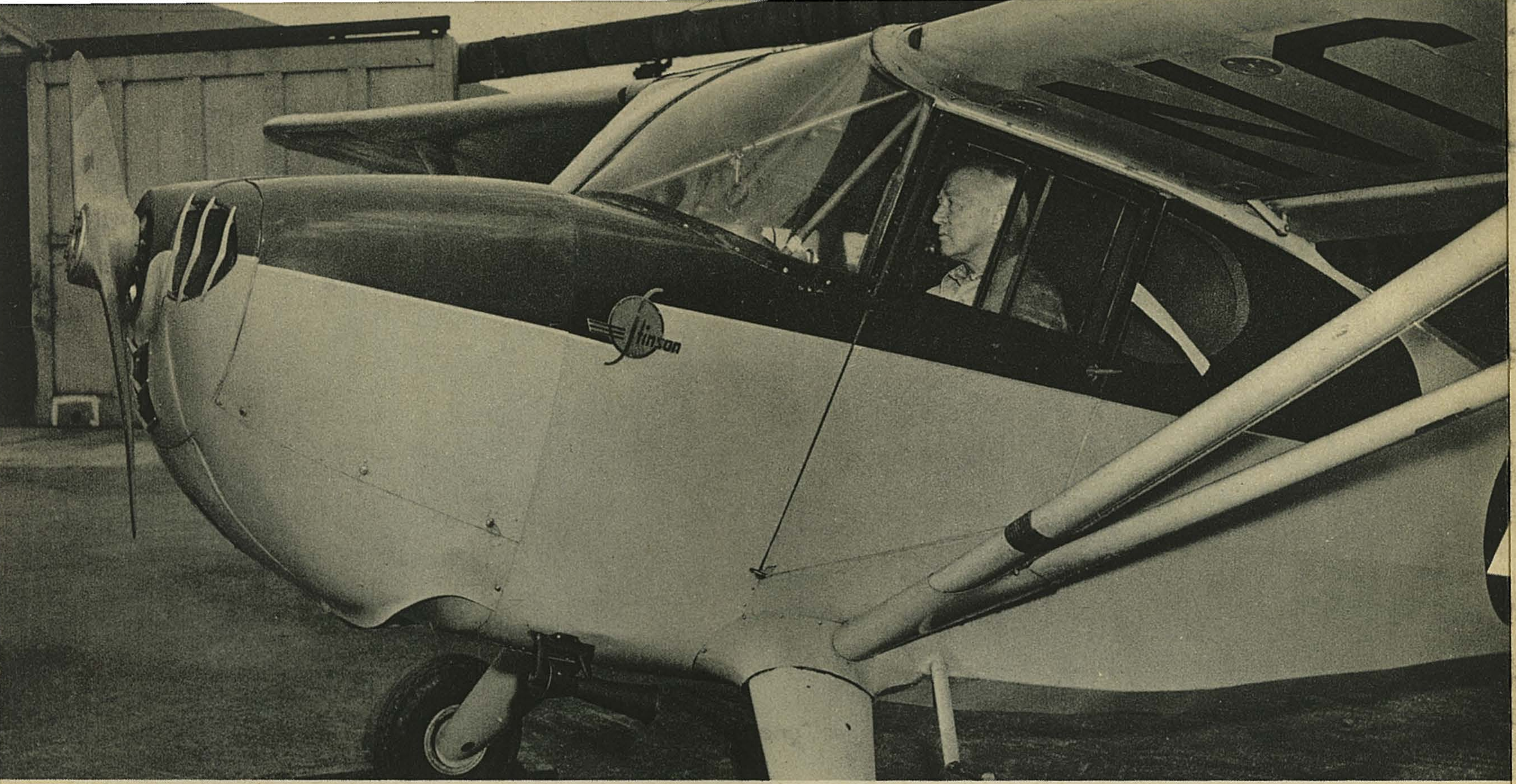
peal for aircraft in this order: (1) utility; (2) dependability, safety; (3) low maintenance costs; (4) economy of operation; (5) comfort, convenience, appearance; (6) ease of handling; (7) original cost.

Further surveys have established that banks and finance companies are eager for the business that will result from financing sales of personal planes, and there seems no question that future purchasers of such aircraft will have the same financing plans available, and at the same interest rates, long familiar in automobile purchases.

Stinson will offer its dealer and distributor organization a wide range of sales aids, including service and sales training courses; the "Stinson Plan" to be offered dealers is patterned in many ways after the proved operations of the automobile industry.

In foreign markets such as South America the Stinson name is today as favorably known as it has been for years among professional flyers and sportsmen in this country, and plans are being made for production to meet important foreign as well as domestic demand for Stinson planes. In line with these plans, the Nashville plant of Consolidated Vultee was recently assigned to the Stinson division for its manufacturing operations.

The Voyager 125, first of the new Stinson planes to see its specifications made public, will have a maximum speed of 125 miles an hour, a range of 580 miles, and a ceiling of 13,800. As a four-place plane, it is designed as a smart, comfortable and safe air vehicle for a small family which wants low maintenance costs and does not require high speed.



HOW GENERAL PATTON FLEW HIS JEEPS

by William B. Mellor, Jr.

In newspaper and magazine articles, he invariably is referred to as a "tank commander"—the hell-for-leather old cavalryman who, buttoned up tight in his star-spangled M-4, charges headlong at the enemy and bowls him over by sheer weight of metal and fire power.

But George Smith Patton is far more than that. He is a general who knows intimately every facet of his many-sided war machine: who fights not with iron monsters alone, but with every other arm—aerial as well as earth-bound—which goes to make up the complex army of today.

"Old Blood and Guts," indeed, is one of the most air-minded of our ground generals, and it was to the air that he looked for the protection of the flanks of his long, slender column of armor when he took his 3d Army on its breathtaking dash across France and into Germany.

"Without the close co-operation of General O. P. Weyland's XIX Tactical Air Command," he said afterward, "we wouldn't have dared to leave our flanks hanging in the air, deep in Nazi territory, and our drive might have been stopped far short of the German frontier."

General Patton's reliance on the airplane, however, dates from long before that dramatic episode, for he was one of the first general officers in the United States Army, if not the first, to utilize the lightplane as a means to achieve the spectacular marches and lightning attacks which since have kept his name, and that of his army, blazoned in the headlines.

It was his personal plane, a little Stinson Voyager, which blazed the aerial trail down which thousands upon thousands of flying jeeps later were to wing their way, to create a new chapter in lightplane history.

Patton first used the little craft back in the summer of 1940, to keep a paternal eye on the training maneuvers of his armored brigade at Fort Benning, two years before the field artillery and the Tank Destroyer Command adopted the lightplane for observation and reconnaissance.

Since then the flying jeep has become the Army's aerial handyman, performing a multitude of chores and doing them more efficiently than ever before. In every theatre of war, Stinson L-5's are doing courier service between Army headquarters and front line units, evacuating wounded from jungle airfields too small to accommodate the larger Army planes, carrying mail, rations and supplies to groups isolated behind enemy lines. And it was Patton and a small group of other forward-looking ground officers who showed the way.

General Patton first learned to fly in an old Curtiss Jenny back in 1921 when, as a major of cavalry, he was quartered at the Army Polo Center at Mitchel Field, Long Island, with an Army polo team.

Engrossed as he was then with polo, hunting and racing, however, the dashing young major gradually lost interest in flying, and allowed his license to lapse.

Then came the summer of 1940. Europe was aflame, and it appeared inevitable that America would be sucked into the maelstrom. The War Department sorely needed an answer to the Nazi panzers which had swept across Poland, Holland, Belgium and France. They found that answer in Georgie Patton, who had commanded the only American tank brigade to see action in the last World War, and had been an ardent advocate of armor ever since.

Patton was sent to Fort Benning, Georgia, to help build and train an armored force which could take on the German panzer units and beat them at their own deadly game.

In World War I, Patton had only 157

tanks to look after. In Georgia he was to have under his command 325 tanks, 800 six-by-six trucks, 500 motorcycles, as many half-tracks, 360 peeps, and hundreds of other vehicles. And the tough old cavalryman was a leader who liked to have a finger in every pie. He wanted to see for himself what was going on, not to have to depend on the reports of his subordinates in the field.

Finding it impossible to cover the vast maneuver areas in remote sections of the huge Fort Benning reservation effectively in a peep or command car, he learned to fly again, at the age of 55, and bought himself a "Voyager". From then on, every man in his command was kept on the jump.

PATTON was everywhere at once, with a blistering torrent of profanity for the goldbricker, a helping hand for the novice, a pat on the back for the man that did a little better than his best. It became legendary among his troops that wherever trouble developed, there, in a few minutes, would appear the Old Man, usually skipping in over the tree-tops in his private plane, to straighten things out.

Once, during a simulated attack on a village, which involved a river crossing, one of Patton's units which had received a lively and profane briefing from their hard-boiled commander back at the base, was astonished, on arriving at the river, to find him there ahead of them.

Standing in the middle of the bridge in the cold light of early dawn, he waved them on, shouting "Come on, godammit! Get those tanks across. Hurry, dammit, hurry!"

He had flown there ahead of them in his Stinson to see for himself that his instructions were followed.

Patton's greatest military asset always has been the ability to stamp his men with the impress of his own dynamic personality, and with the aid of his flying jeep, he was able to be everywhere at once during those hectic days of preparation; driving, cajoling, leading. The results of that personal leadership still are to be found in the *esprit de corps* of the 2d Armored, although that division long since was transferred to another command.

When General Patton took his armored troops into the large scale maneuvers of 1941, through the swamps of Louisiana, the mountains of Tennessee, and the pine forests of the Carolinas, his little Voyager went with him, and it wasn't long before he discovered its effectiveness in tactical use, as well as for training.

The General after his return, in June, 1945, to America. In July he went to Europe again.

Unlike the heavier and faster observation planes, which had to stay upstairs to perform their missions, Patton was able in his sturdy little ship to sneak up on the "enemy," flying very low; take a peek at them over the crest of the nearest hill, and speed away, still skimming the tree-tops, before any effective fire could be brought to bear on him. It gave his units a big edge in the war games, and it wasn't long before commanders of other units were utilizing the Stinsons, too.

By the summer of 1942, General Andrew D. Bruce was using them extensively at his newly-created Tank Destroyer School at Camp Hood down on the Texas prairies. Borrowing pilots from the Air Corps to fly them, he utilized the little, slow-flying planes to lead his destroyers across country in search of advancing tank units, and he immediately found them invaluable for that mission.

Soon every branch of the armed forces was calling for lightplanes. General Jacob Devers wanted them for all his tank units. Lieutenant Colonel J. C. L. Adams, an infantryman, wrote a complete manual for their operation, and visualized them as replacing gliders in air-borne operations. The Field Artillery adopted them in the winter of 1942 for observation.

General Patton sold his "Voyager" before he embarked for Casablanca in October, 1942, but after the North African coast was secured, he had several Stinson "Flying Jeeps" shipped to him and used them in Tunisia, Sicily and in Europe. In the fall of 1944, when his 3d Army had run right off its tactical maps in its dazzling dash across France, it was a lightplane which carried a new set of charts to the stalled columns of armor.

One day, just before the 3d Army smashed into the German Westwall fortifications, General Patton witnessed a startling demonstration of just how valuable a lightplane can be. Standing on a hilltop, the General saw a B-26 crash behind the German lines on a shell-pocked field where no plane could have landed safely. But one did.

The pilot of a cruising lightplane also saw the B-26 go down, so he dropped in too, while only a few hundred yards away German soldiers were rushing to capture the bomber's crew.

The little observation plane picked up the co-pilot of the bomber, bounced across the rough field, and got into the air just before the Germans arrived. After dropping his passenger safely behind the American lines, the courageous pilot rounded up six other flying jeeps—and the seven fliers, armed only with .45 automatics, started back to try to rescue the rest of the bomber's crew from their captors. They turned back, however, when the commander of the B-26 waved them away. All of the fliers later were recaptured by armored units of the 3d Army.

Today, there is hardly a military use to which the flying jeep has not been put. But it took a tanker to learn their capabilities, and to make of them one of his most valuable weapons.

Left, the new Model 39 of Consolidated Vultee, in use by American Airlines to conduct a new cargo experiment. The plane has been carrying between East and West coasts cargoes as various as fresh fruits and vegetables, a load of 60 gas ranges, a 9¼ ton load of plane parts. *Business Week* has heralded the project as "a surprise performance . . . spectacular." The fuselage, 15 inches above the ground, facilitates truck loading.

THE COMING BOOM IN AIR TRANSPORT

Rates will come down and speeds go up; you'll get an unprecedented service.

By W. C. Wold

NO one can look into the future and say what the volume of transcontinental passenger traffic will be in the postwar era. But we can find out how many people have been traveling from coast to coast in the past, and find logical reasons why more will do it hereafter, and why more of them will do it by air. We can then predict with some assurance the effect of these factors upon postwar transcontinental air traffic.

The war has enabled aviation to gather the momentum which might have required at least ten peacetime years. Thousands in the services have traveled throughout the world by air — thousands have had their lives saved by nothing more than the speed of air transportation — and to many thousands more in the Army and Navy Air Forces, flying has become a business. These men and women, many with hundreds of flying hours to their credit, are returning to mingle with their families and friends; and, they are bringing their aeronautical nonchalance with them. Man's inherent gregariousness, and his desire to keep up with his brother, will do the rest.

The increased size of aircraft is itself another favorable factor in stimulating air travel, for it does much to eliminate fear. The fear of flying is not simply the fear of height.

To be strapped in a seat in a relatively *small* vehicle, then taken to great heights in vast spaces, is a combination of mental hazards stronger than many people can overcome. Just as people who wouldn't put one foot into a rowboat think nothing of spending several days in the Queen Mary, those who wouldn't approach a "Cub" will nonchalantly fly in an airplane like Consolidated Vultee's Model 37, in which they can walk up and down stairs and roam around. They will feel secure, that is, in such an airliner in the company of two hundred or more fellow travelers taking the same "risk"—in a plane where the words "comfort", "luxury", "convenience", and "transportation" overshadow the word "flying".

The increased speed of tomorrow's airplane is another favorable factor. Transcontinental air service today is far from bad. One airline recently inaugurated a schedule which cuts the coast to coast trip to about fourteen and one-half hours elapsed time, two hours and forty minutes faster than anything we have had so far. It still means that a busy New York executive cannot spend a full business day in San Francisco, for example, without spending the better part of another day in travel.

Compare such an operation with that of Consolidated Vultee's Model 37, which Pan-American will use, at a block speed for a non-stop 2500-mile hop of 320 mph. That's an elapsed time of well under eight hours. When our busy executive can pass his normal sleeping time in transit, spend a full business day in San Francisco, then use his normal sleeping hours again to return to New York in time for the next full business day, transcontinental air traffic should show a marked increase.

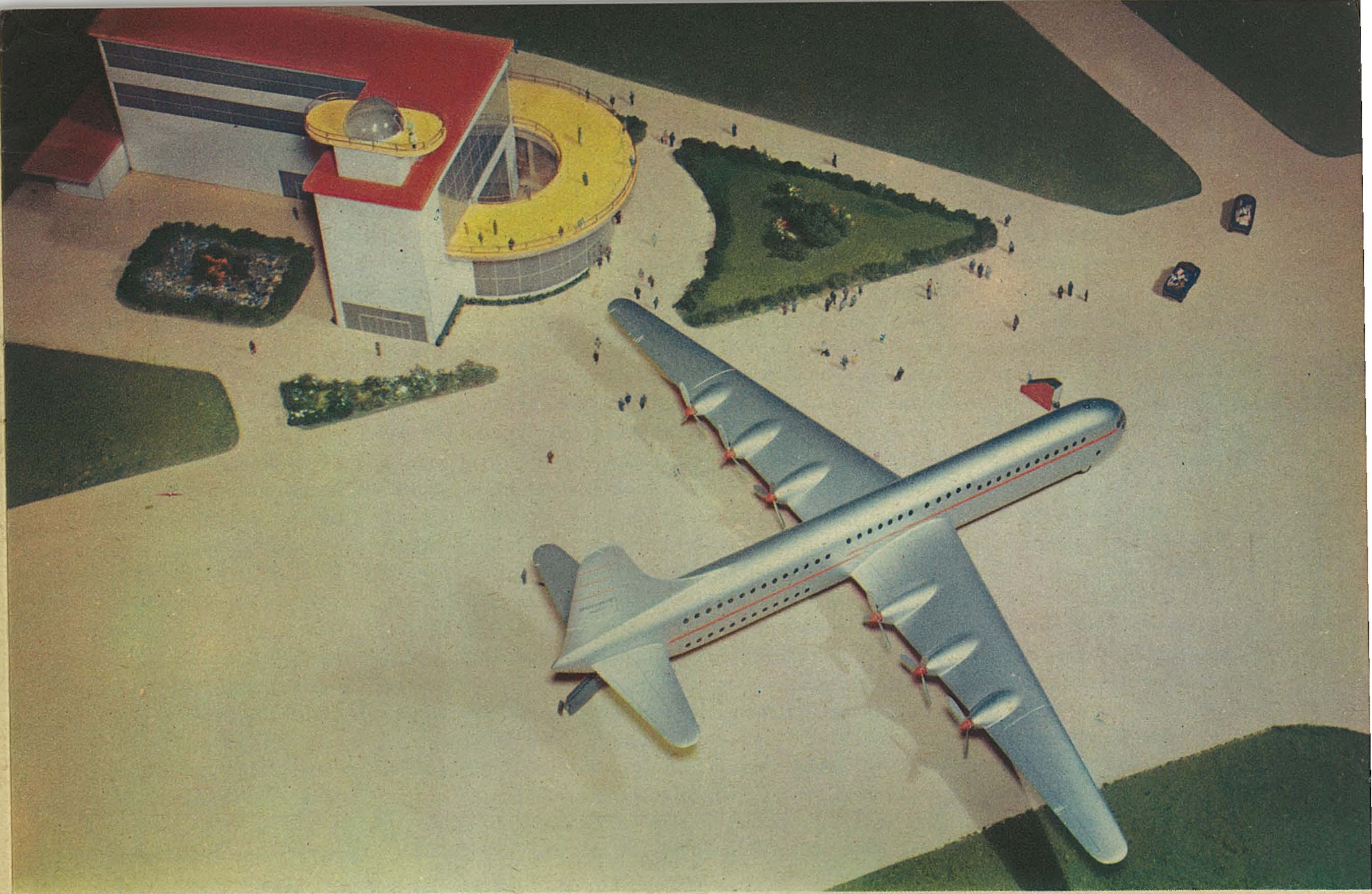
LOWER costs are going to build future air traffic, too. Remember the economic truism that market volume varies inversely with price; and the aerodynamic corollary that cost decreases with aircraft size.

The reasons are not too obscure. Volumetric capacity of a plane varies as the *cube* of its linear dimension, while fuselage structural weight varies roughly as the *square*. Therefore, the larger fuselages give us a higher ratio of volumetric capacity to fuselage weight. Airplane capacity by weight, of course, depends upon the percentage of the gross weight which is available for power plant, lifting surfaces and useful load. Hence the larger airplane, with its greater useful load volumetric capacity, has more of its gross weight available for power, lift, and useful load.

Of course, if the larger wings and power plant cost us relatively more weight, we wouldn't be getting anywhere. But they don't. As almost everybody knows, the weight cost of aircraft engines, in pounds per horsepower, has been decreasing steadily with increased power output. Further, the trend toward higher wing loading is decreasing the pounds of wing weight per pound of load carried. This all adds up to *more* payload, carried *farther*, for less quantity of airplane.

Maintenance costs are proportional to the quantity of airplane being maintained. But crew costs and several other factors have a negligible increase in comparison with increased airplane size. So we keep getting more and more for less and less. And the limit is not in sight.

A great many people believe that the land plane will reach its limit before the seaplane, because of the problem of landing facilities and landing gear structure. But in either case the limit is not easy to predict



This is Consolidated Vultee's Model 37, the passenger transport version of Model XC-99 pictured on Page 1. It will carry 204 passengers, will fly from New York to London in about 9 hours. Pan American World Airways will use a fleet of these monsters. The plane requires some 4,350,000 man-hours to build, will have every luxury, including hot and cold running water. Use of helium instead of air in the huge tires will save 154 lbs.

when you consider that we already have in construction in San Diego the Army's C-99—a land plane weighing twice as much as the largest land plane yet flown, and for which few landing fields of sufficient length and strength have yet been constructed.

It is evident then that we are facing an era of larger and faster airplanes, which will tend to reduce the cost of traveling by air with a resultant increase in traffic.

The fare from San Francisco to New York, as this is written, is $159.68 by air, $142.00 by Pullman, $70.00 by rail coach, and $52.00 by bus. *But the direct flying cost of a full load transcontinental flight for the six-engined Model 37 is $10.85 per passenger.*

Now don't think for a minute that $10.85 is all you'll have to pay to travel from the West Coast to New York. There's a little matter of indirect flying costs to be added to that figure, which in present-day airline operations amount to about 200 percent of the direct flying cost.

But for the sake of speculation, let's double our calculated direct flying cost of $10.85 to be conservative, and add as much again for the indirect costs, on the assumption they may not decrease as anticipated; and then let's say the airplane never averages more than three-fourths of a load of passengers. That still adds up to a cost of only $86.80 for the transcontinental air trip — a figure that is coming. It won't be next year, or maybe in two years. But it's a certainty.

It is easy to think of the factors that will increase our transcontinental travel, but to evaluate them is another story. Here are the figures for the average daily passenger traffic between the two busiest pairs of transcontinental air terminals:

Terminals	*Daily Air Passengers**	*Daily Rail Passengers***
New York and San Francisco	76	140
New York and Los Angeles	65	123

*From CAA Research and Analysis Division Reports Origination and Destination Airline Traffic Survey for 73 Selected Stations, August 17 to September 13, 1944. (Fractions omitted.)

**1/365th of the estimated number of rail passengers for the year 1940, from Table 12 of "Initial Study of Air Transportation", by the Association of American Railroads, January, 1944.

They are not very impressive figures, are they? But for every one of these seventy-six existing daily transcontinental air travelers, don't you think there might be in the post-war era another prospective customer who will have overcome his fear of flying? Or another one who desires the speed of air transport, combined with the comfort and convenience of his former Pullman? Or another who just couldn't afford the price of air transportation in 1940, or even 1945?

Well, I believe there are lots of people in each of these categories.

Let us project ourselves into a day in the future. Make it a nice spring day between one and two years after the close of hostilities. You are a buyer for a big merchandiser of women's style clothing. One of the country's top dress designers is having a style showing in New York tomorrow. You reach in your pocket and pull out a time table which looks something like this:

	Leaves S. F. (PT)	Arrive N. Y. (ET)	Leave N. Y. (ET)	Arrive S. F. (PT)
Trip 1	2200 (10 pm)	0900 (9 am)	1200 (Noon)	1700 (5 pm)
Trip 2	1200 (Noon)	2300 (11 pm)	0200 (2 am)	0700 (7 am)

Then you say, "If I take Trip 1, tonight, I can see the whole style show, place some orders, spend the whole evening around New York, and catch Trip No. 2 back in time for the next morning's work."

Such a schedule is based upon an eight-hour elapsed time, which is possible with a plane like Consolidated Vultee's Model 37, cruising at 340 mph. It provides one arrival at each terminal at a reasonable hour at the beginning of the working day.

The time zone differential is a little factor which prevents transcontinental scheduling from being too simple. It makes an eight-hour trip *appear* on the time table as eleven hours Eastbound, and five hours Westbound.

That simplified schedule suggested here is one that will furnish two transcontinental flights each way every twenty-four hours, and requires only two airplanes to be in the air sixteen hours per day. Designers and operators both anticipate an overall airplane utilization of eighteen hours per day will be attained in the postwar period. In comparison, the schedule shown above is conservative from the standpoint of utilization, since it can be maintained by a three-plane fleet averaging a utilization of only 10.6 hours per day per airplane.

So you can certainly look forward to service like this, from the standpoint of schedules.

SO much for passenger traffic. What about cargo? It is my opinion—although many do not agree—that we are about to enter a transition period regarding the relative importance of cargo and passenger traffic. I believe that it will not be many years before airline operators, and our whole industry, as a matter of necessity, will place cargo traffic foremost in our thinking, and will consider traffic a secondary source of revenue.

An indication of this trend lies in statistics recently released by the C. A. B., showing that airline revenue from express and freight sources increased 107 percent from 1942 to 1943, and from 1938 to 1943, 2870 percent.

The trend is clear. Hawaiian Airlines, for instance, carried nearly seven million pounds of air cargo during 1944, which is a 25 percent increase over 1943. Nearly one-third of the total poundage was in fresh fruits and vegetables.

This last spring saw the beginning of full planeload shipments of perishables from California's Imperial Valley, when an American Airlines DC-3 stopped at El Centro to pick up six thousand pounds of tomatoes for delivery to Cleveland markets the following morning.

The Department of Agriculture, in conjunction with the Edward S. Evans Transportation Research, has made several studies of the marketing of perishable produce by air, considering such items as strawberries, tomatoes, and lettuce. Pan-American Airways has recently joined United Airlines and the A & P Tea Company in a research project on the air transportation of perishables being conducted by Wayne University. Braniff Airlines and Chicago and Southern Airlines have announced a 30 to 40 percent reduction of air express rates on perishables.

The annual convention of the United Fresh Fruit and Vegetable Association, held this year in Chicago, devoted an entire day to the problems connected with the use of air transportation in their business.

These are just a few air cargo news items. All over the country interest is growing in airborne perishables. The word "perishables" isn't confined to fruits and vegetables. Any commodity which has a high rate of decrease of market value with time is a perishable.

The long list of such items includes daily newspapers, weekly magazines, drugs and medicines, motion picture film, dresses, shoes, and all forms of style clothing, popular phonograph records, and sheet music.

One of the big problems in cargo transportation is to get a good payload for the return trip. It's fairly easy to get a full load going one way, but you double the cost if you have to fly back an empty airplane. It is fairly well established, at least in my mind, that Southern California contains the West-to-East, steady, payload potential to make air transport of garden perishables a successful proposition, if only we can be sure of the East-to-West backhaul.

Research has disclosed that a seventy-five percent backhaul payload for at least three airplanes per day of the current airline type is already assured from the city of Detroit alone.

Clothing from the big style centers in New York, fish from the Eastern seaboard, meat from the big packing houses, and magazines from the Eastern publishers, are some of the potential backhauls which are being investigated. Each commodity or type of business we attempt to take into the air brings its own particular problems, solution of which often leads one far afield from aircraft design—into marketing, packaging, distributing, and other phases of American business life. A few years ago we didn't realize these fields would concern us.

From my contact with men in the fields of growing, packing, shipping, distributing, and selling food products, I am learning some interesting facts. Take lettuce for example: In passing from the grower's garden to the consumer's table, it goes through four price mark-ups, at least one of which may be eliminated by air transportation. If garden produce is maintained at a temperature between 36° F. and 42° F. during transit, it is unnecessary to freeze or even to ice it.

TRANSCONTINENTAL cargo traffic has its future in three main categories of service.

First comes the normal common-carrier type of service, which includes air mail, the Railway Express Agency's "Air Express", and the new, slightly slower, but cheaper type of airline cargo service, like American Airlines's "Air Freight".

This common-carrier type of service, for all practical purposes, is available to anyone for shipping anything. Naturally, because it involves individual shipments of non-uniform cargo to varying destinations, it is the most expensive form of air cargo. Air mail, as you know, costs eight cents an ounce, or $1.28 per pound. It would cost $90.00 to air mail a seventy pound package (the maximum weight permitted) across the country.

"Air Express", which is an extension of the familiar Railway Express service into the air, will handle any shipment whose size and weight will fit the dimensions and flooring strength of the aircraft involved. Unlike air mail, air express varies in cost with distance as well as weight. To air express seventy pounds across the country would cost about $60.00.

The Air Freight service operated by the airlines themselves is a bid for larger volume shipments. American Airlines "Air Freight" has four rate classifications, depending upon the value and the density of the cargo, with minimum quantity shipments of certain commodities allowed under these rates. For example, Air Freight's Class D Rate, which includes cosmetics, machine parts, and printed matter in fifty pound minimum packages, enables you to ship seventy pounds from Los Angeles to New York for $31.60.

Now even $31.60 is a prohibitive cost for shipping a seventy pound crate of lettuce to New York, no matter how crisp and tasty it may be upon arrival. But that difficulty brings us to the second main category of postwar cargo traffic which we may anticipate: The Contract Carrier. Suppose you buy a fleet of airplanes and make a deal with me to haul all the lettuce I raise from California to specified markets in the East, and another deal in Philadelphia, for example, to haul mushrooms or magazines on the way back, for a rate of, shall we say, fifteen cents a ton-mile. That is known as contract carriage, in contrast to the various forms of common carriage, which render a service to all comers.

You see, with a setup like that, where you've got plenty of available payload in full airplane lots, and you know where it is, and where you are taking it, you have about the most streamlined air cargo operation possible. You are not taking off and landing every two hundred miles, loading and unloading a few packages here and there, with all the personnel and red tape necessarily involved. Your indirect costs are at a minimum. Consequently you can afford to charge a far lower rate than the common carrier.

Fifteen cents a ton-mile is not a far-fetched rate for such air cargo transportation, especially if you use a large four engine airplane. At that rate, the seventy pound crate of lettuce would be flown from Los Angeles to New York for just $13.10.

That is still costly lettuce. But at the Fresh Fruit & Vegetables Association Convention in Chicago, considerable discussion among airline officials resulted when they learned that airplanes are at hand with which they will show a profit at rates in the vicinity of five cents a ton-mile. I believe that such rates are attainable. The quickest way to get them is to start people talking and thinking of such possibilities.

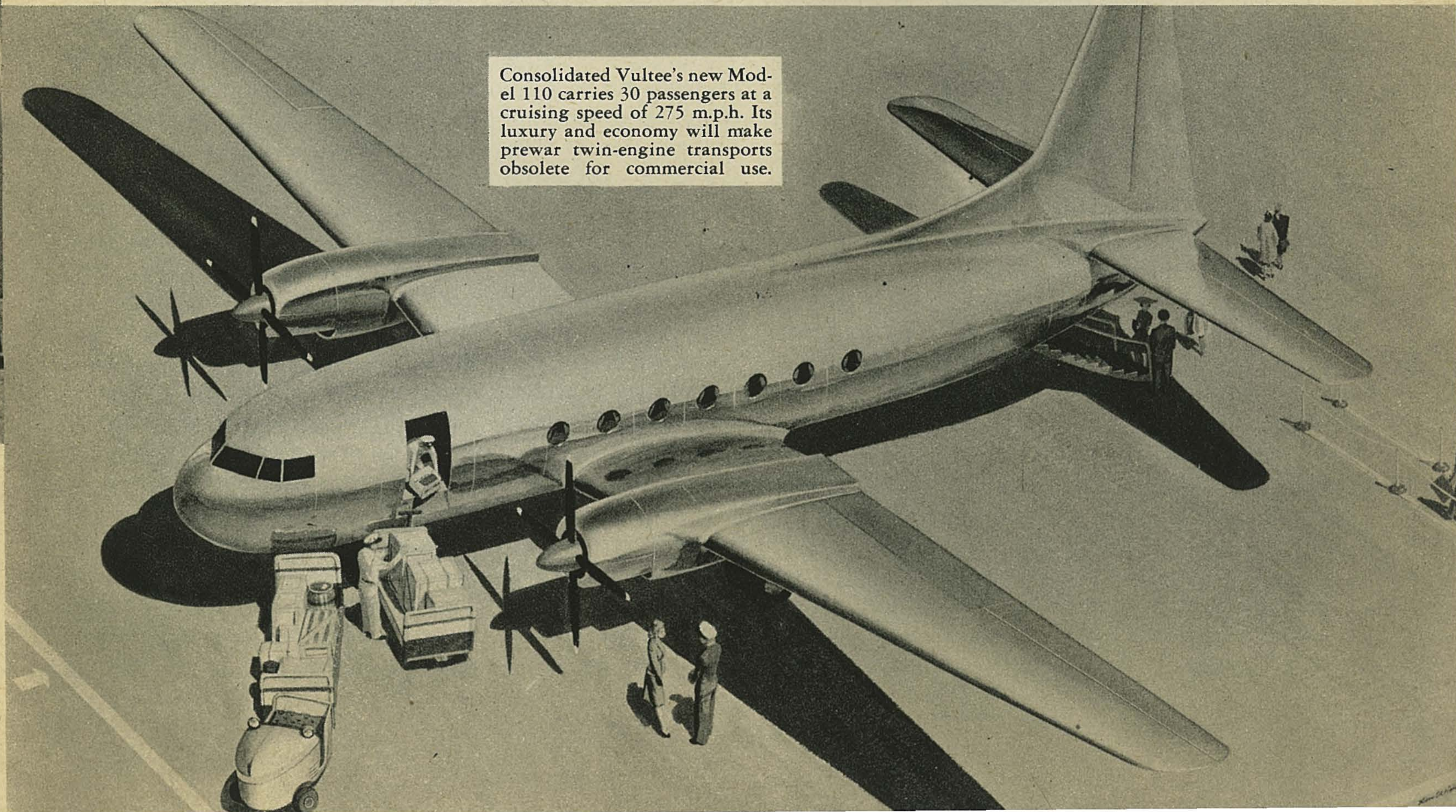
In talking about passenger traffic, I mentioned a direct flying cost of $10.85 to carry one passenger twenty-five hundred miles. *That is a direct cost of only a little over four cents a ton-mile.* It is based upon a luxurious version of Consolidated Vultee's Model 37, which naturally has a low ratio of payload to weight empty. When we get around to tearing out all the excess weight of structure and furnishings, and make an all-cargo version of this airplane, we anticipate almost doubling the payload. This, of course, will halve the ton-mile cost. The time is not so far off when we can afford to fly lettuce, after all.

Now, of course, if you're going into this contract carrier business to haul my lettuce around, you probably expect to make at least ten percent on your money. If I think I am a big enough operator and have enough loads of lettuce to send to New York and Chicago every day, I may decide to save that ten percent myself. I will buy my own airplanes and fly my own lettuce to market.

This constitutes the third category of air cargo traffic which we may anticipate — ownership of fleets of airplanes by business organizations whose size can make it profitable.

The pattern of regulations which will govern various forms of air transportation is being considered by the Civil Aeronautics Board.

Whatever the outcome, let us hope it favors the good old American competitive system. If the American competitive spirit is given free rein, I know we have enough capital, and enough aviation-minded business men in this country, to create a demand for air transportation and aircraft manufacture that will keep America the strongest country in the commercial aviation world. There is no better national defense we could build.



Consolidated Vultee's new Model 110 carries 30 passengers at a cruising speed of 275 m.p.h. Its luxury and economy will make prewar twin-engine transports obsolete for commercial use.

APPLYING OUR EXPERIENCE TO JAPAN

by Captain Arthur Settel

THE European battleground, 1940-1945, has been a schoolroom for Generals, and the lessons learned, particularly with respect to vertical warfare, are already being applied against Japan. Theories of warfare are so far ahead of World War I strategy that celebrated campaigns such as Tannenburg, the Marne and the Aisne, Soissons, Vaux and Douaumont and the Somme, seem as remote as the adventures of Alexander the Great.

What have these lessons been and how will they hasten the conclusion of the great contest with Japan? How have our Air Forces benefited to the same purpose? These are questions being answered on the Islands of Iwo Jima and Okinawa, in the skies over Nippon, along the traffic lanes of the East China and the Yellow Seas, and through the plains and mountains of southeast China.

Pan-Germany and Japan have been as alike in ideology as they are different geographically. Both have been autocratic states controlled by the fiat of a handful of men following identical patterns of conquest by invasion—partly for the sake of national glorification, partly for the loot to be stolen from occupied countries, and partly for strategic advantages. Ruthlessness and fanaticism, and greed for territorial aggrandizement, are characteristics almost universally ascribed to both peoples.

In point of geographical advantages, size, shape and depth—factors which count so heavily in military strategy — Germany differs from Japan as greatly as the United States from the British Isles. These differences must be kept in mind if the gigantic operations now being mounted in the Pacific are to be understood.

An accident in history placed Germany in a central position on the continent of Europe, making possible her exploitation of the raw materials of weaker neighbors concurrently with the full-scale development of domestic mineral reserves.

Although smaller than the State of Texas, Germany was in the front rank of machine-age states, became almost entirely self-sufficient in food production, exploited to the maximum her rich coal resources, developed short lines of communications, and inflicted upon the world a mobile army which was thought to be unbeatable.

Japan, in contrast, consists principally of four large volcanic islands—Honshu, Hokkaido, Shikoku and Kyushu — and several hundred smaller islands stretching into an arc to less than 200 miles off the continent.

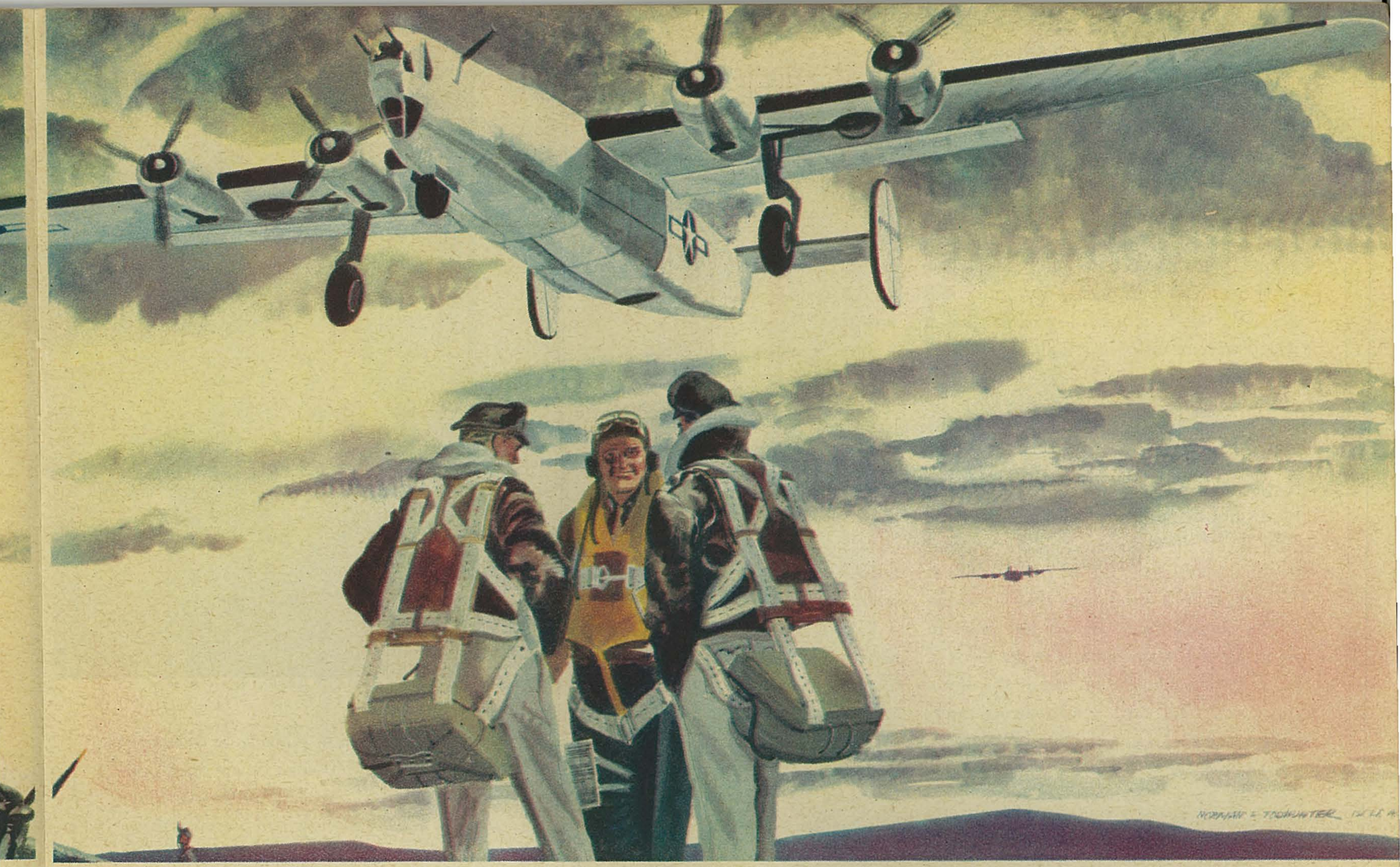
Japan's past immunity to invasion can be ascribed to the historic isolation of the islands, which lie north of the main Southwest Pacific trade routes, and to the country's natural poverty throughout most of its 148,000 square miles — an area almost exactly the size of Montana.

Unlike Britain, with isles centered in the world's great land masses, and provided with readily accessible bases for land-based aircraft, Japan sits on the edge of the vast Pacific on one side and close to impoverished China on the other. All these factors make Japan extremely vulnerable to the kind of war in which America has perforce learned to excel.

The first principle of our successful offensive operations in the Battle of Japan consists of building up, first, our air superiority—which we had already achieved by early 1945 in the Central and Southwest Pacific—and then our air supremacy, which we had clearly established when our Navy shelled Jap cities in July with no opposition whatever.

An enormous four-pronged aerial claw consisting of seven air forces is now poised to beat down the Jap in what is already one of the fiercest struggles of all time. These air forces are our Alaskan-based 11th, stabbing at the Kuriles in the north; our Guam-based 7th, striking from the east; our Marianas-based 5th and 13th, lunging from the southeast; and our China-based 14th, attacking the enemy from the west in China.

Added to this accretion of power is the combined might of the 20th Air Force, consisting of the 20th Bomber Command (until recently based in India) and the 21st Bomber Command, now dropping veritable avalanches of fire upon Japan's industrial cities. In addition, there is our 10th Air



This watercolor by Captain Norman F. Todhunter, AC, shows Liberators of the 14th Air Force, which has been in China since the war's early days.

Force, which formerly operated from India against Burma targets and is currently on the move to other unspecified areas, Eastward. Every one of these striking forces, including the 21st Bomber Command, has been employing B-24 Liberators along with other types of air power.

And, as if this gigantic accumulation of striking power weren't enough, the seasoned bombardment groups of the great strategic and tactical air forces in Europe, which brought Germany to her knees, are being retained and redeployed at rapid tempo, to be added to the present order of battle in the Pacific. By the time this is read, the 8th Air Force will be operating over Japan under General Doolittle.

Hence the sum total of American air power which has now been set in motion against the Far East enemy staggers the imagination. Its weight of missiles will soon dwarf the 2,878,000 tons of destruction hurled upon vital objectives in Europe by Allied bombers.

Our campaigns in the Orient promise to be more decisive and our armadas far more concentrated, if for no other reason than that our airmen are wiser, our planes bigger and better, our devices vastly improved, and our early mistakes eliminated. What we have learned in Europe will undoubtedly hasten our victory over Japan.

OUR air superiority in the European Theatre was reached early in 1944, when Goering's hottest pursuit planes, the Focke-Wulf 190's and the Messerschmitt 109's, found themselves wholly unable to drive off the vast fleets of Liberators and Flying Forts surging in from the west and south on their double-barreled mission—destruction of Germany's war industries, and annihilation of her armies and weapons of war.

Our complete air supremacy in Europe was achieved only a few months later, well before our June invasion, when armadas of more than 1,000 four-engine bombers, escorted by nearly as many fighters, were able—at any hour of day or night and in good weather or bad—to attack any point within Germany or the German-controlled continent.

The great versatility of the Liberator as a weapon of total war was first demonstrated on this European proving ground. As a heavy bomber, it dropped 450,121 tons of explosives on the German enemy, or 28 percent of the AAF total. It went out on 224,892 sorties. Liberator crews destroyed 2,617 planes in aerial combat, damaged 1,703 and destroyed 352 others on the ground.

It further proved itself as the number one espionage agent: Liberator aerial reconnaissance, developed into a fine art, brought back enemy intelligence of priceless value. It proved itself as the number one quartermaster supply medium: in aerial transport it was matchless for its speed in the delivery of supplies to our own lines and behind enemy lines. It proved itself as one of the world's greatest weapons in psychological warfare: in leaflet dropping it carried the truth to captive nations, refuted the enemy's lies, and even reached into the minds of German soldiers.

The "24" likewise proved itself as a tactical weapon of extraordinary possibilities, both before and after our Rhine crossing.

In retrospect, our air campaign against Germany seems to have progressed with breathless speed. It was in 1943 that our 8th Bomber Command first went out after ten German key industrial cities which, because of their importance to the aircraft industry, were given high target priority.

Ball bearing plants, steel producing centers of the highly developed Ruhr triangle, and aircraft assembly and component plants, were reduced to rubble. Between June and October, 1943, Germany was deprived of a thousand pursuit planes which were never built as a direct result of these bombing assaults.

In close coordination with the RAF, Lt. Gen. James H. Doolittle's 8th and Maj. Gen. Nathan F. Twining's 15th Air Forces so thoroughly destroyed major factory complexes in Germany and Austria during the "Big Week" of February 20-26, 1944, that production of enemy fighter planes was cut 75 percent. The result was that Germany was in no position to replace her losses in aerial combat, was impotent in the teeth of the relentless hammering from the skies, and could offer only spasmodic counter-efforts.

Not only did we destroy German planes; we even more effectively destroyed Germany's facilities for fueling them.

The selection of Germany's oil-producing and gasoline storage centers as our top priority target, one particularly assigned to the 15th Air Force Liberators, is regarded by many as the masterpiece of Allied strategy in the Battle of Europe. A mobile army is paralyzed without fuel for its planes, tanks and armored vehicles. The comparative scarcity of petroleum in Europe added to its attractiveness as a point upon which to bear down.

Our large-scale assaults on oil began in earnest in April, 1944, and gained momentum after D-Day. In May, synthetic plants in Saxony, northeastern Germany, the Balkans and Czechoslovakia, were attacked by the AAF. In June the RAF Bomber Command took on the ten oil plants located in the Ruhr, beginning with the four largest, which together produced a third of Germany's synthetic oil supply.

While days were long, the Bomber Command visited plants in western Germany and the AAF plants farther east. Later, as the days grew shorter, the RAF struck at the more distant targets and the AAF joined British planes against the Ruhr.

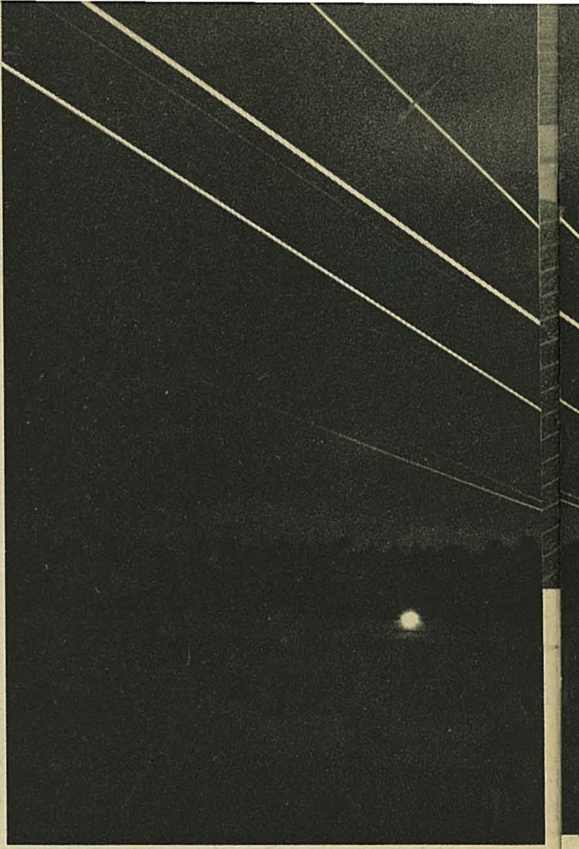
In the meantime, fleets of 15th A. F. Liberators were busy reducing German oil sources in Rumania, Hungary and Austria, and a series of synthetic plants in Czechoslovakia, Poland and Germany proper. Great oil industries at Ploesti, Brux in the Sudetenland, Blechhammer and Odertal in German Silesia, Oswiecim in Polish Silesia and Ruhland south of Berlin, were torn asunder and rendered practically useless by such a storm of explosive devastation as the world had never seen.

No single bombing campaign has been so complete in its effect as this attack. But for this strategy, the Germans would have been able to fight a war of movement on many fronts. As it was, so little oil was being produced in Germany in April, 1945, that the small amount could not be efficiently distributed—it would have taken too much oil to move the remainder to where it was needed most.

Before the campaign began, Germany had a normal monthly output of 1,344,000 tons of all oil products, and 532,000 tons of motor and aviation fuel. By September, 1944, the output of oil was down to 310,000 tons, 23 percent of the original figure. By April, 1945, it was down to 7½ percent of what the output had been a year before.

Germany's capacity for a war of movement was further reduced by what our Air Forces did to her railroads. The immense destruction inflicted on the rail network of northwestern Europe by the flying artillery of Gen. Hoyt Vandenberg's 9th Tactical Air Force has set the pattern of things to come in Japan.

Take one instance. Two Panzer divisions sped across Germany in 72 trains, each division traveling on three lines with 12 trains on each. When they arrived at Nancy, they found they could only get from there to Paris at the rate of 8 trains per day instead of 72. A part of the two divisions pushed onwards to Paris in their 8 trains that day. But the remainder, the greatest part of the force, detrained and made the rest of the trip to Normandy by road. Setbacks like this made Germany's case hopeless. Indeed, it has been stated flatly by German industrialists that their nation's principal difficulty in the last year of the war was transportation. The Jap transportation complex is even more vulnerable.


AAF Kodachrome

ONE of the fundamental lessons which our bombing experts learned on the scorched lowlands of Europe was the inter-dependence and co-equality of land power with air power, neither being an auxiliary of the other. No important plans were drawn for ground, sea, amphibious or air operations without the full participation by Air Force experts in discussions which preceded them.

In Europe, our airmen have pioneered in the science of keeping up with a front moving with the speed of an express train.

Thus the four-engine battle fleets of our 8th Air Force in Europe could be switched, seemingly without preparation, from flying long-range strategic missions against remote targets deep inside of the Reich, to making hops against tactical objectives such as enemy pockets at Falaise, along the Seine, along the Loire, or in the Ruhr.

The power of the modern combat airplane to isolate a battlefield was further demonstrated conclusively in Europe by our 9th Air Force, which consisted of a bomber command and three tactical commands charged with the mission of searing a path through enemy defenses for the advancing Allied ground forces.

A basic principle of Allied strategy was implemented when on July 18th, 1944, an armada of 1,056 Lancasters and Halifaxes of the British Bomber Command, 570 Liberators of the 8th Air Force and 318 mediums of the U. S. 9th Air Force, attacked enemy defense positions and concentrations of armor less than an hour before the advance of our armies to the east of Caen.

The same technique of heavy bomber preparation was employed by the 8th Air Force in bombing ahead of the First Army

Streaks from the wing lights of 7th AAF Liberators in the night skies of the Marianas Isles.

at St. Lo. A short time after the Air Force attacked, ground forces surged forward to pave the way for the armor to break in, drive into Brittany, and knife across France until it paused outside of Metz six weeks later.

Such technique carried us eventually straight into the heart of Germany, in a total victory that came less than a year after we actually landed our troops on a continent presumably defended by the greatest land power in the world.

Jap warlords who might still entertain any doubts as to what the future holds in store for their own misguided country, should consider the final box score on combined AAF and RAF operations in Europe. A preliminary review shows a total of 2,878,000 tons of bombs dropped; 3,688,000 sorties flown and 50,891 enemy planes destroyed.

The AAF, which was in combat for 41 months, dropped 1,555,000 tons of bombs, or 54 per cent of the total, and destroyed 30,152 aircraft, or 59 per cent of those knocked out in combined Allied effort. The cost to America of strategic bombing by the AAF against the Germans was between 23 and 24 billion dollars, or less than one-tenth of the 244 billion U. S. war cost up to January of 1945.

THE basic weakness of the Jap defense lies in the dispersion of her forces over thousands of miles and their inability to negotiate a five-front war. What Northern Italy, the Balkans and Norway were to the German High Command, the scattered Pacific Islands, Southeast Asia, the Philippines and East China are to Japan.

Japan's weaknesses in material resources make her vulnerable, too.

Pre-war she imported vast amounts of war material from England and America. But Japan has not been able to replenish her existing stocks from such Anglo-American-Dutch sources since Pearl Harbor. Hence she is dependent heavily upon the treasure house of raw materials in her ill-gotten empire, of which Indo-China, Thailand and Burma are the granary.

But our present position in the Philippines and Okinawa now enable us to blockade Jap supplies from the south. Of the 6,400,000 tons of Jap shipping which she owned or captured since the beginning of the war, 2,140,000 have been sunk by the AAF alone. Army and Navy joint operations have deprived the enemy of more than 21,000 planes in three-and-a-half years of fighting.

Thus Japanese transport problems make her far more vulnerable to our air attack than a continental power like Germany ever could be.

At that, the whirlwind of our air power is really only beginning to close in.

It took Great Britain three years and the United States two years to mount the first 1,000-plane bombing assault on Germany. In contrast, the 21st Bomber Command, which employs B-24s as well as 29s, and has been established in the Mariana Islands less than 12 months, already drops bomb loads 30 per cent heavier than the 8th Air Force's record total for any single raid.

Interestingly enough, it has been suggested, without official corroboration, that careful study of the effect of earthquakes furnished the evidence upon which the AAF has modified its bombing from the pin-point methods used in Europe to the saturation fire-bombing technique being employed against the Jap home islands.

All this is only the curtain raiser. With each successive American air assault, an average of 100 planes are being added to our attacking force. It has been estimated that 2,000 Very Heavy Bombers and other four-engine types could soon be based on Okinawa. One cannot comprehend the inferno they will leave in their wake.

As we proceed, the lessons we learned in Europe are being well applied.

The Jap fleet can still strike out in waters which are protected by land-based aircraft. And the Jap Air Force, despite its losses, is still a powerful defensive weapon near home bases. Japan has stock piles estimated to be good for another year of total war. Further, Japan still has a 4,000,000 man army, a fourth of them deployed in South Formosa and China. Two or two-and-a-half million men at home are eligible for military duty. We have not yet come to grips with this force.

But we have the forces and the material now in hand to outmatch anything Japan can possibly show. Even more important, we have accumulated invaluable experience.

As General George C. Kenney said in late July: "When this force is turned loose against Japan, something has got to give. We expect our troops will go ashore anywhere with almost total lack of opposition as they walk up the beaches."

The greatest lesson we have learned in the European proving grounds is the vital importance of coordinated attacks by ground, sea and air forces, working in equality and interdependence. Doctrines which have been forged in the flame of Europe's battles are to guide the great operations being mounted for the subjugation of our Japanese foe. There may be some doubt as to the duration of this struggle. But on the question of its final issue there is none.

STRIKE at the Lifeline

THIS is a reproduction of an official U. S. Navy painting, a water color by Lieutenant Dwight Shepler, which shows a Navy Liberator making a strike at sea against an enemy submarine.

In this war American airpower has written a new kind of history in nullifying the enemy's efforts to interfere with our own shipping, and in imposing—conversely—a blockade on the enemy which steadily withers his resources.

Japan, as an island power, is far more susceptible to such a blockade than Germany ever was. For while Germany at the height of her power had access by land to the resources of a major part of Europe, Japan can only replenish her island stores by tortuous trips across water.

Navy Liberators have been blasting Japanese shipping out of the Pacific ever since the early days of the war. Some extraordinary feats have been reported. For instance, a Navy Liberator piloted by Lieutenant Arthur G. Elder of Dallas, Texas, was credited in June with sinking or damaging the enormous total of 68,395 tons, in a series of Pacific searches that the Navy described as a "three-month rampage." The total damage inflicted by the plane broke the previous record of 63,850 tons set by Captain Norman M. Miller, in his famous Liberator "Thunder Mug."

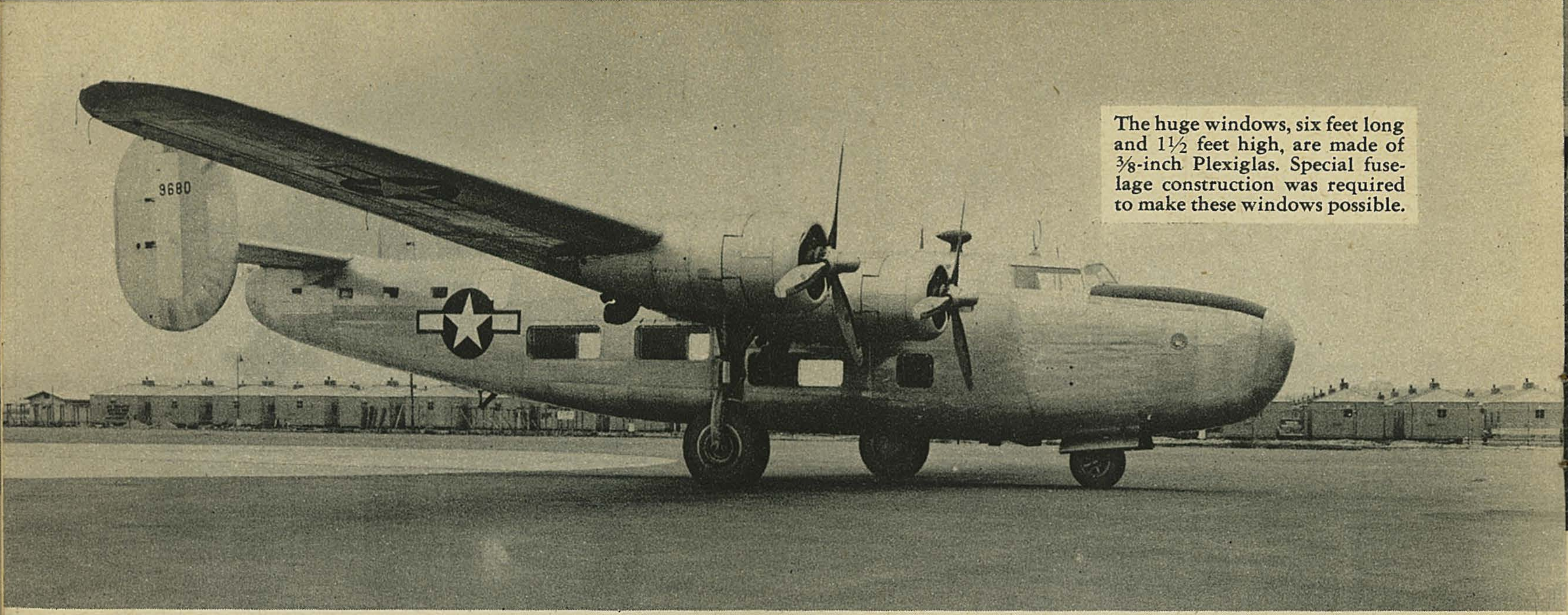
Whereas the Army speaks of its Liberator B-24 as a bomber, the Navy calls its Liberator PB4Y a search plane; the B-24 goes on "missions," the Navy Liberator on "searches." It is not uncommon for these great Navy planes to make hops of from 1,600 to 2,000 miles over Pacific waters that are heavily patrolled by Jap fighter planes, in quest of enemy shipping that can be attacked.

Jap ships are sought in their ports, as well as at sea. One Navy Liberator, for instance, recently flew a round trip to Singapore, covering more than 2,000 miles; in the Singapore harbor, bombs were dropped from a level of 100 feet on Jap transports anchored there. The Liberator, despite injuries from anti-aircraft fire that knocked out one engine and destroyed half its tail, got safely back to base. As a result, this plane, commanded by Lieutenant Frank H. Cutaiar of Kennett Square, Pennsylvania, was credited with making one of the "longest three-engine flights" on record.

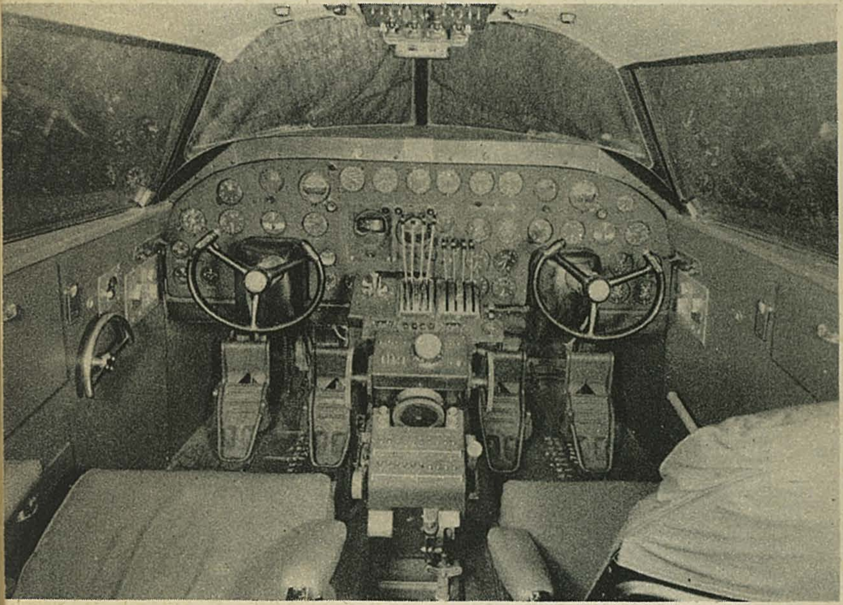
These Navy search planes are usually lone wolves. They go out over vast areas of ocean space alone, and they fly without fighter protection, having to rely on their own speed and firepower for defense against enemy attack.

The newer version of the Navy Liberator has been given a single tail, and is known as the Privateer PB4Y-2. But the older PB4Ys are still in service, too, and their gallant crews are bleeding the Jap strength away along all the ocean lifelines the enemy has been using for transporting his troops and supplies.

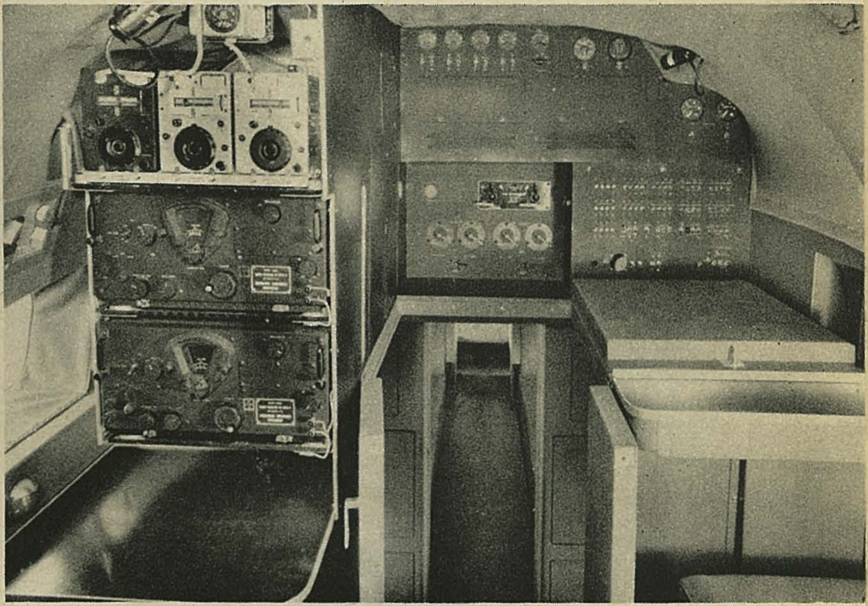
USNR
1944



The huge windows, six feet long and 1½ feet high, are made of ⅜-inch Plexiglas. Special fuselage construction was required to make these windows possible.

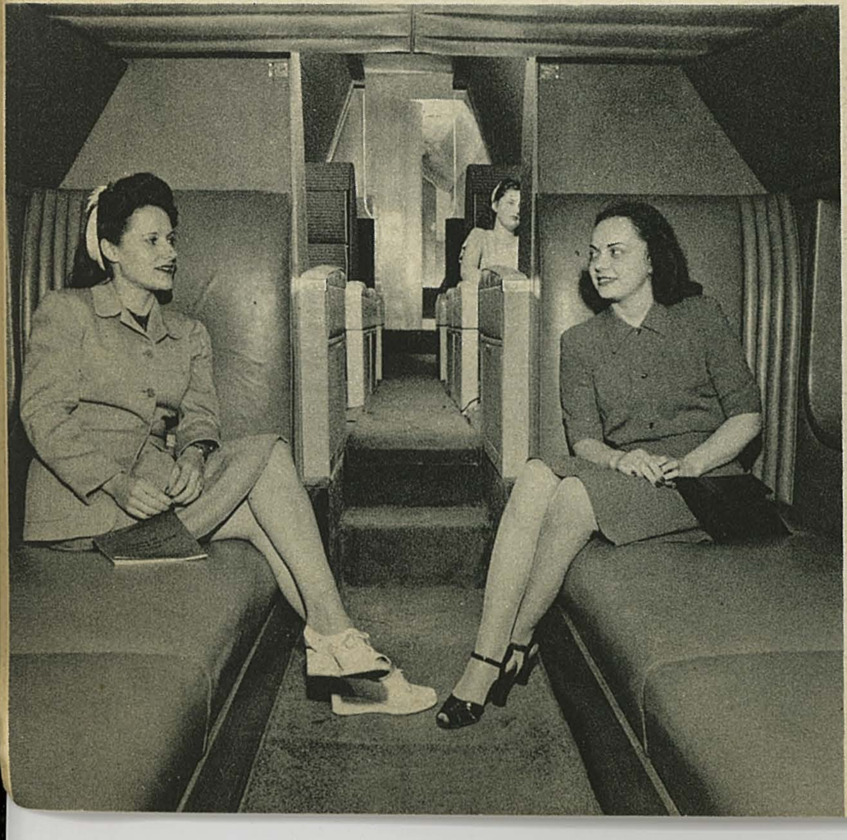


Above is the flight deck, with pilot's and co-pilot's instrument panel. Front windows of this enclosure are ½-inch tempered glass.

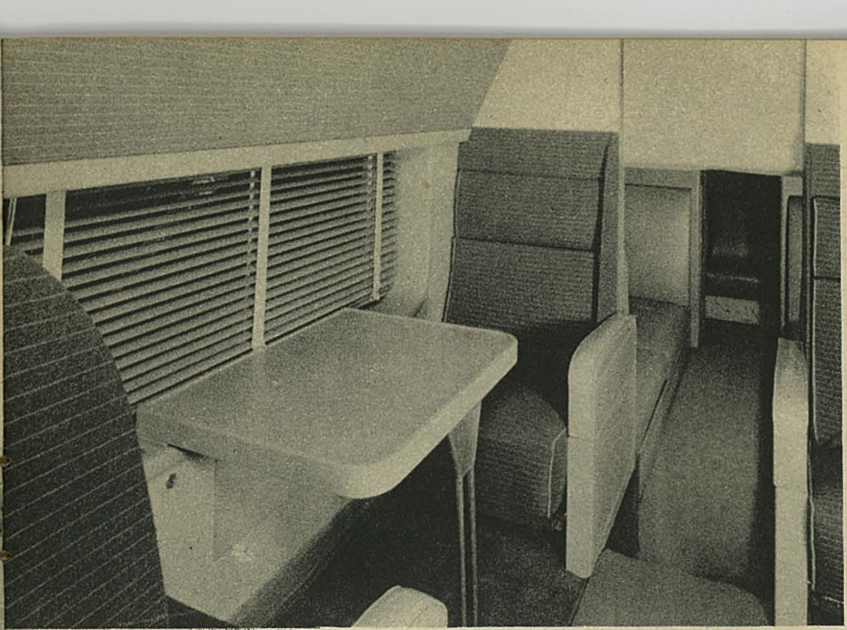


Above is the Navigator's compartment, with open door. The plane has the most modern mechanical improvements, including a heat anti-icing system.

Below is the lounge, upholstered in green leather; in the background is the passenger compartment. Seats make up into berths.



Below is the plane's writing compartment. At every seat, oxygen outlets are provided at the top of the window, and a small spotlight for reading.

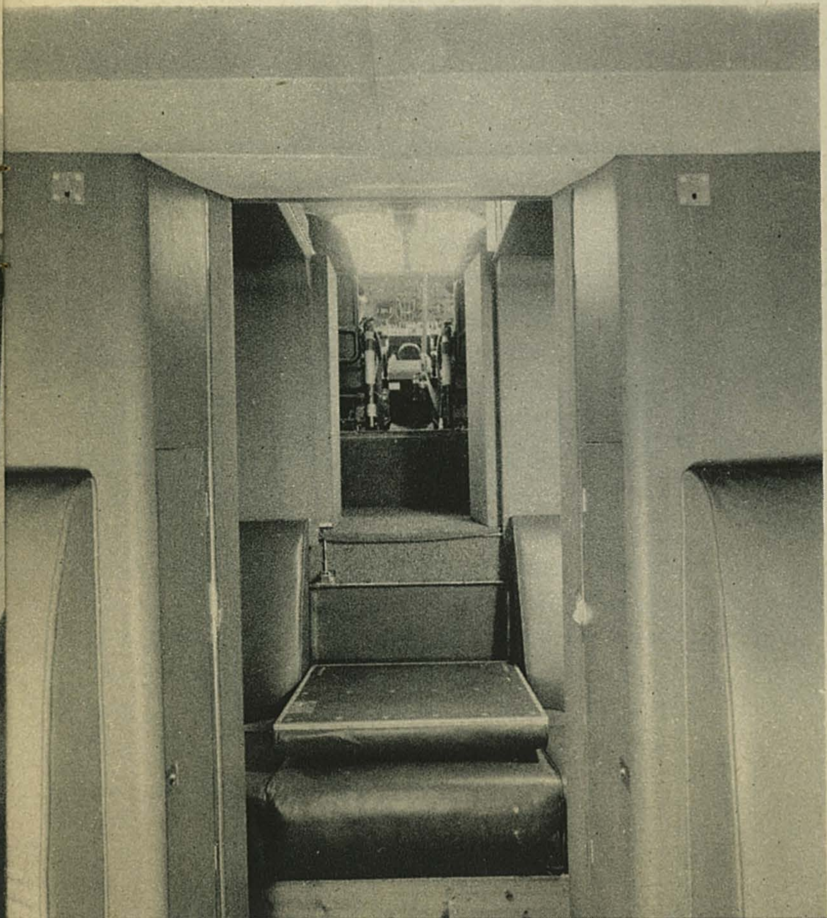


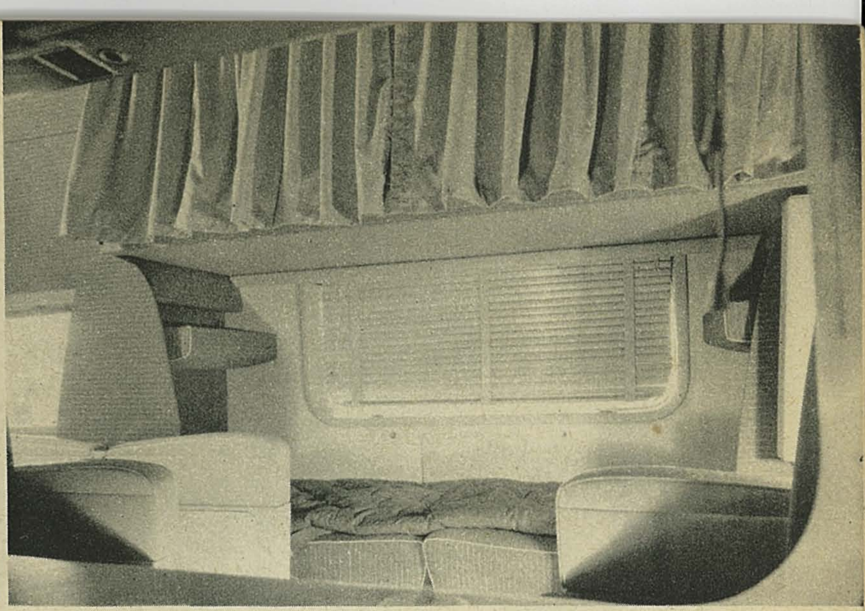
Seats have removable tables, ash trays, built-in magazine racks.

A Liberator De Luxe

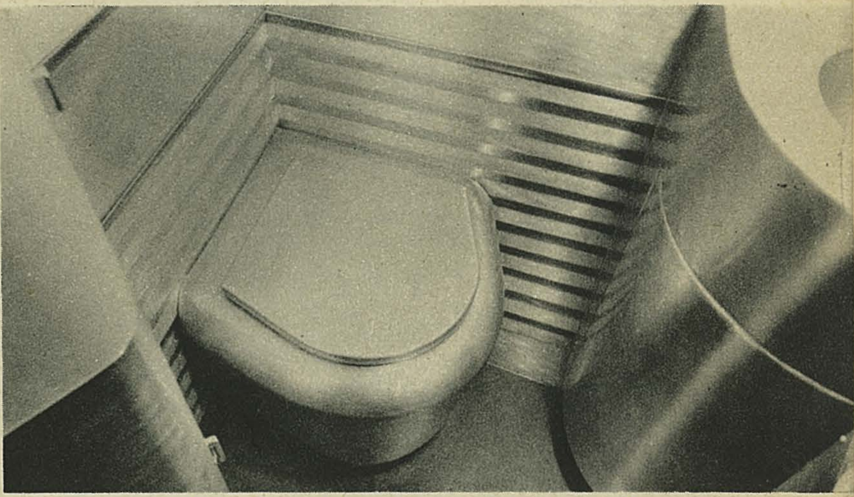
This is not a plane of the future; it's the XB-24 — first Liberator ever built by Consolidated Vultee. Long graced with the name "Grand Pappy", it was recently converted into a transport plane for use by the AAF in carrying high officials on long flights. Its numerous innovations make it the most luxurious wartime transport in existence, and its comforts would surprise many a combat crew who flew in to B-24s the hard way. The conversion work—the special pride of F. A. Learman, who is general sales manager of Consolidated Vultee —was done by the company's Flight and Service Department, of which R. R. Rogers is director. A. C. Bussy, chief of Air Transportation, was directly in charge of the alterations.

Entrance to flight deck, showing leather upholstered bulkhead.

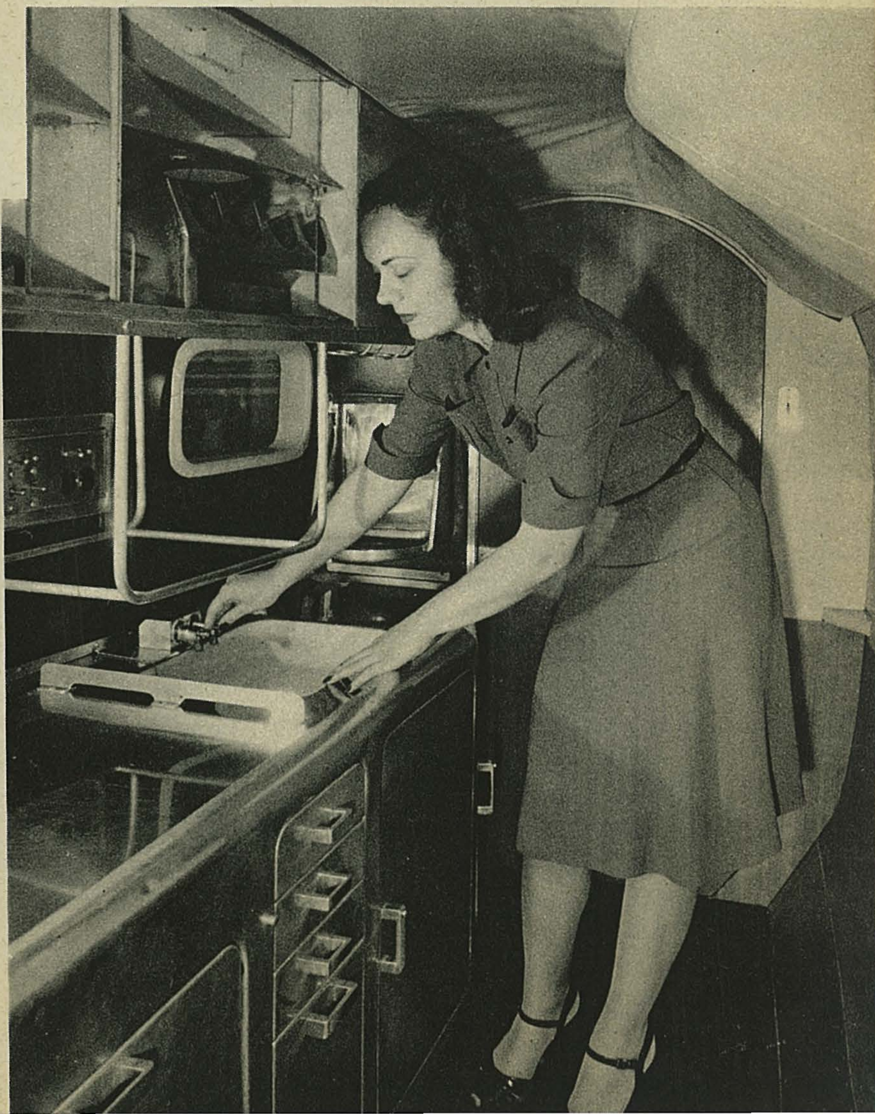


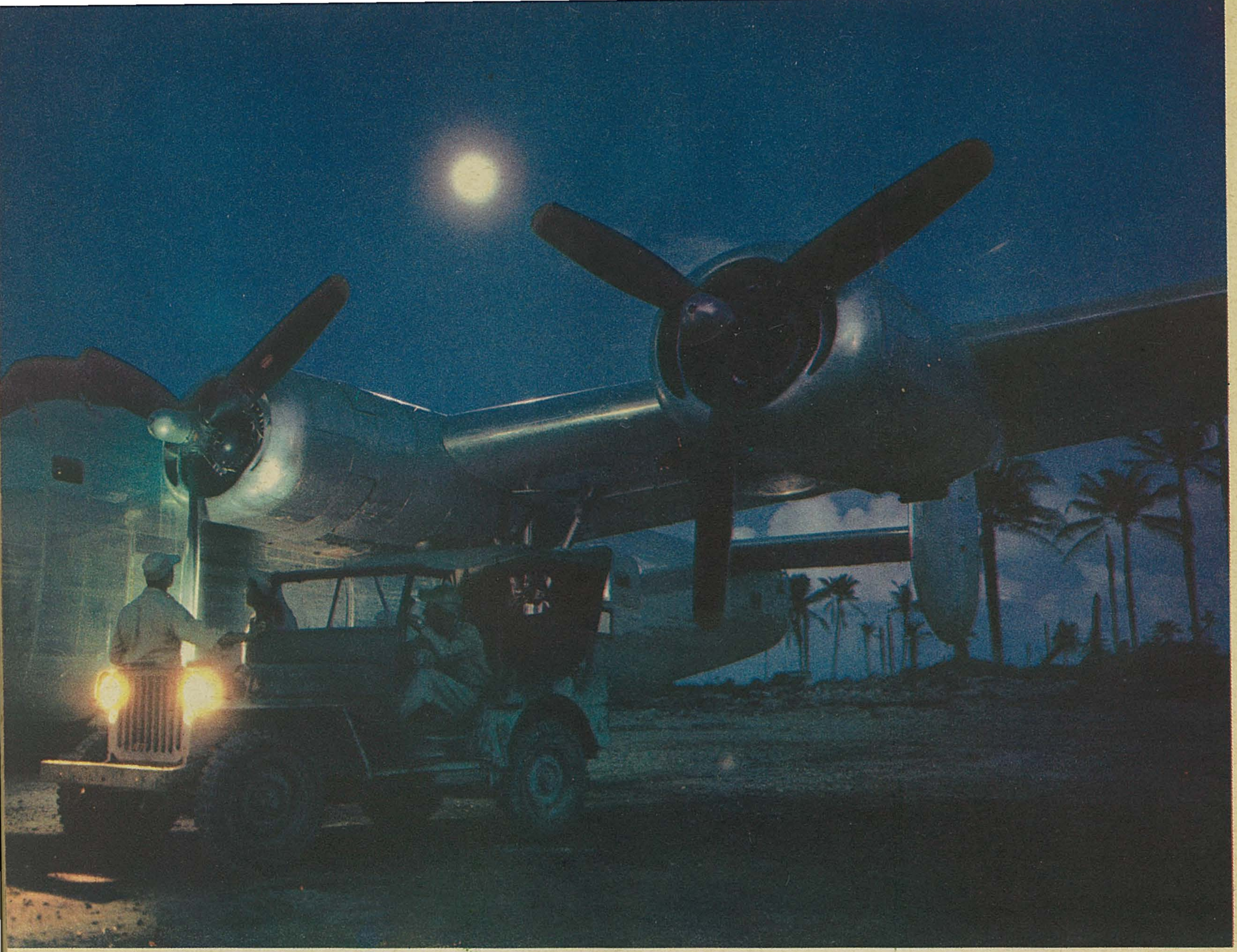


Seats make upper and lower curtained berths, 8 feet long.



Above: the leather and dural lavatory. Below: the galley compartment, with hot and cold water, stove and refrigerator.





Larry Keighley Kodachrome

Liberator landing under a tropic moon on one of our Pacific islands.

FINDING the WAY

By Lieutenant Robert M. Lambe

PLAYING a vital part in the Pacific wing of the AACS is a Liberator that performs a task vastly different from the one the engineers originally designed her for. Affectionately known as "Bucket of Bolts", this Lib has the job of keeping constant check on the communications facilities and radio aids to navigation operated by the AACS in the Pacific.

The AACS is the Army Airways Communications System. Every pilot dreams of the day when he can't get lost, when he'll always be on a highway in the sky as well-defined as the Harrisburg-Pittsburgh turnpike. With each passing day, the communications facilities operated all over the world by the AACS bring that dream closer to realization.

Old "Bucket of Bolts", sans turrets and guns — thereby becoming a "Fat Cat" in Pacific air lingo—makes up for her lack of armament by the hodge-podge of radio equipment she packs. She's capable of tuning in practically every radio navigational aid in existence, and many an hour is spent aloft carefully checking the legs of a radio range, the power of a homing beacon, the speed and efficiency of a direction-finding network.

In the Pacific the AACS mans the system that's known as JACSPAC—Joint Airways Communications System-Pacific — and it serves Navy and Marine flyers as well as the AAF. Navy Privateer and Coronado patrol bombers, no matter how far they are from land, rely on ground stations, homing beacons and D/F nets of the AACS in covering their search areas.

Lt. John Fouts, AACS Detachment Commander at Peleliu Island, recently received a commendation from Admiral Nimitz for his outstanding services in "keeping cleared vital movement reports of exceptionally heavy Marine aircraft traffic, far in excess of the normal capacity of his unit."

But AACS is far more than a Pacific Service. With redeployment from Europe now in full swing, the North and South Atlantic routes are handling the greatest mass of flights of aircraft in history. Over 50,000 men a month are being flown back to the United States, along with the veritable flood of combat aircraft.

To handle this increased aerial traffic, 4,000 additional flights are being made across the Atlantic each month. That means a flight every ten minutes. Add to this the bombers and fighters of Lt. General Doolittle's Eighth Air Force, which have been redeployed to the Pacific, and you see how the radio trails in the sky now resemble the Indianapolis Speedway.

To the AACS men on the ground this means millions of words of radio messages and position reports from airborne operators, millions more radio-telephone conversations between pilots and control tower operators, and constant electronic tracking by Direction Finding Nets. These have been instrumental in the saving of many lost aircraft. They work in conjunction with Air/Sea rescue units, and on many occasions have directed rescue units to within a few miles of the spot where a plane went down.

The Direction-Finding networks that are offering such world-wide guidance are each composed of three or four stations scattered over an assigned area, providing electronic fingers that point the way to a plane that's lost, pin it within a few miles of its position, tell the pilot where he is and where to fly.

Indicative of the kind of "saves" made by the D/F net is the story of a B-24 that took off from Newfoundland for a routine flight to the Azores. The ship was buffeted by high winds and adverse weather conditions. Some thirty minutes after the time the ship was due to arrive the D/F station in the Azores received a call from the plane's pilot saying he was lost, and requesting a bearing. The lone D/F station "shot a bearing" on the plane's radio signals and gave the pilot a new course. The wind was still high; bearings were necessarily taken with regularity. Every few minutes the ship would be given a new course to steer.

In the circle, high near the mountain top, is one of our Aleutian weather reporting stations. The men who operate it change shifts every four days, need three hours to reach the base in the valley.

AAF Photo

After four hours of constant tracking by the D/F station, the Lib finally sighted the Azores and came in for a landing exactly four hours and 37 minutes late. There was only enough fuel left for a very few minutes' flight.

Skipping many time zones away from the Atlantic, you find AACS men operating in skyways over the Hump the radio navigational aids that lay tracks in the sky similar to the layout of a well organized railroad. There are mainlines and spurs, marshalling yards and controllers. The sky engineer pilots his plane along a predetermined course on regular schedules over many such different "tracks". In peak periods AAF planes pass over the Hump only 3½ minutes apart.

FOUR and a half years ago AACS was an infant offspring of the AAF, with only 350 officers and men. Today the organization numbers well over 40,000, scattered in a thousand detachments the world over.

Its first task was to establish the necessary communications facilities along the North Atlantic in the pre-Pearl Harbor days of 1941. Since then the expanding air routes of this global war have put AACS men in vital spots all over the world. On the Arctic Circle in Greenland and Alaska, for instance, AACS men operate weather reporting stations, and millions of words of weather information are handled daily over the AACS networks.

One of the newer radio aids operated at airports throughout the world by AACS is the Instrument Landing Approach System. At fogbound airstrips this series of devices provides a pilot with a radio signal that lines him up with the runway, and a bent glide path that guides him down through the "soup" to the end of the runway, making possible landings that would otherwise be suicidal.

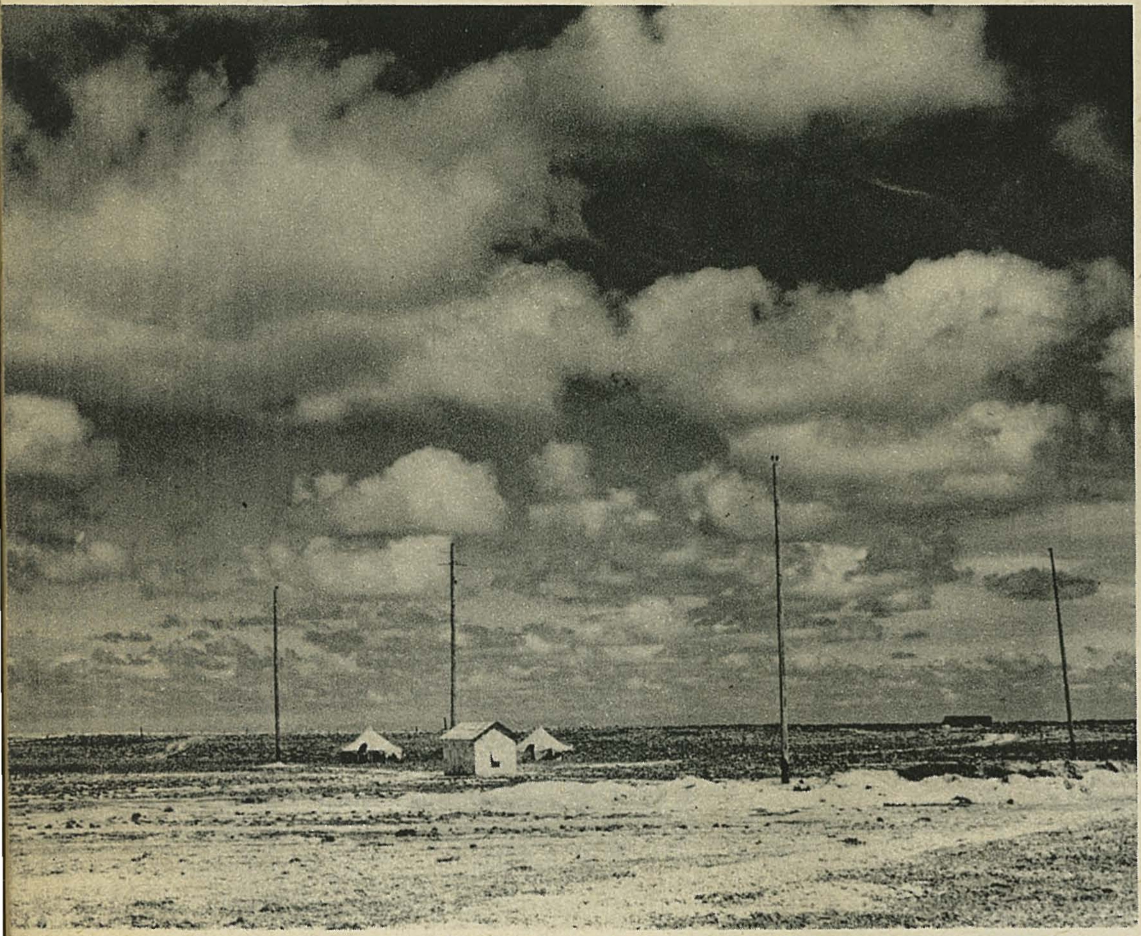
Perhaps the most glamorous of the varied tasks performed by AACS men is the operation of control towers all the way from

Germany to Iwo Jima and Okinawa. Often times these men must work under enemy fire.

For instance, the control tower operators and ground station men landed on Iwo Jima on D-Day plus nine. There they learned to play "Hop-Scotch Through Hell" as they dived from their 17-foot control tower while Jap shells landed around them more often than planes.

At Tacloban airstrip on Leyte, AACS men in a control jeep managed to get a Navy frequency and brought in over 200 Navy planes from baby carriers that were under attack. All during the confusion of planes landing on a runway pocked with shell holes, the Japs kept up constant air raids. At Myitkyina, Burma, AACS operators were among the first to land to direct the traffic of the airborne operation. They set up shop in a foxhole, since the Japs didn't agree that the airstrip had been "taken". Continued artillery, rifle and machine gun fire fell on the field. And once in Southern Burma a Lieutenant in charge of an AACS team, while giving a plane its landing instructions, calmly told the pilot to standby and circle the field, while he meanwhile picked up a rifle, potted a Jap sniper on a ridge overlooking the field, and then told the pilot he was clear to land.

At Saipan, B-29s returning from the first mission over Tokyo were scheduled to land at the rate of one a minute. The big boys, low on fuel, gave control tower operators a fit as they roared into the landing strip only 20 seconds apart. For the Japs hadn't quit their "nuisance" raids and there was no time in 20 second intervals for the AACS men to seek protection by making long leaps to the ground from the control tower. They finally built themselves an "elevated foxhole" on the tower catwalk, putting extensions on their headphones and mikes, in order to control traffic while peeping over sandbags.

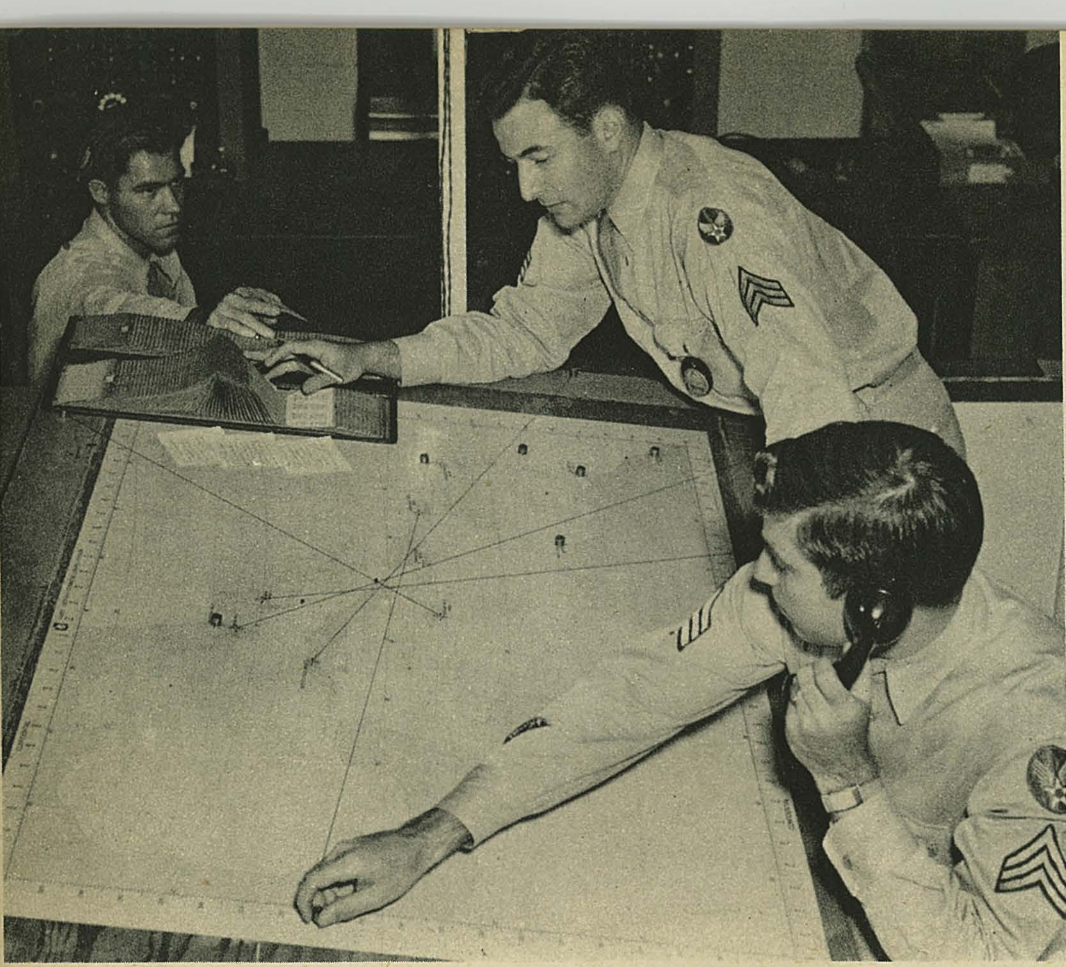


This is the JACSPAC installation on barren Christmas Island in the Pacific—one out of thousands

BEHIND these "hot-spot" instances lie cold statistics of the AACS that provide an index to the might of American air power. Aside from its watch over combat aircraft, the AACS saw 560,000 tons of America's high priority cargo, mail and passengers moving through the heavens in 1944. Over 700,000 wounded men were moved by air from battlefields to field hospitals and back to the United States in that year. Every fifteen minutes a military plane took off to cross the Pacific. In providing communications for all these planes, the men of AACS transmitted more than 6,000,000 words a day. More than 50,000 contacts with planes in the air are made each day by ground operators, and control tower men give over 250,000 landing and takeoff instructions every 24 hours.

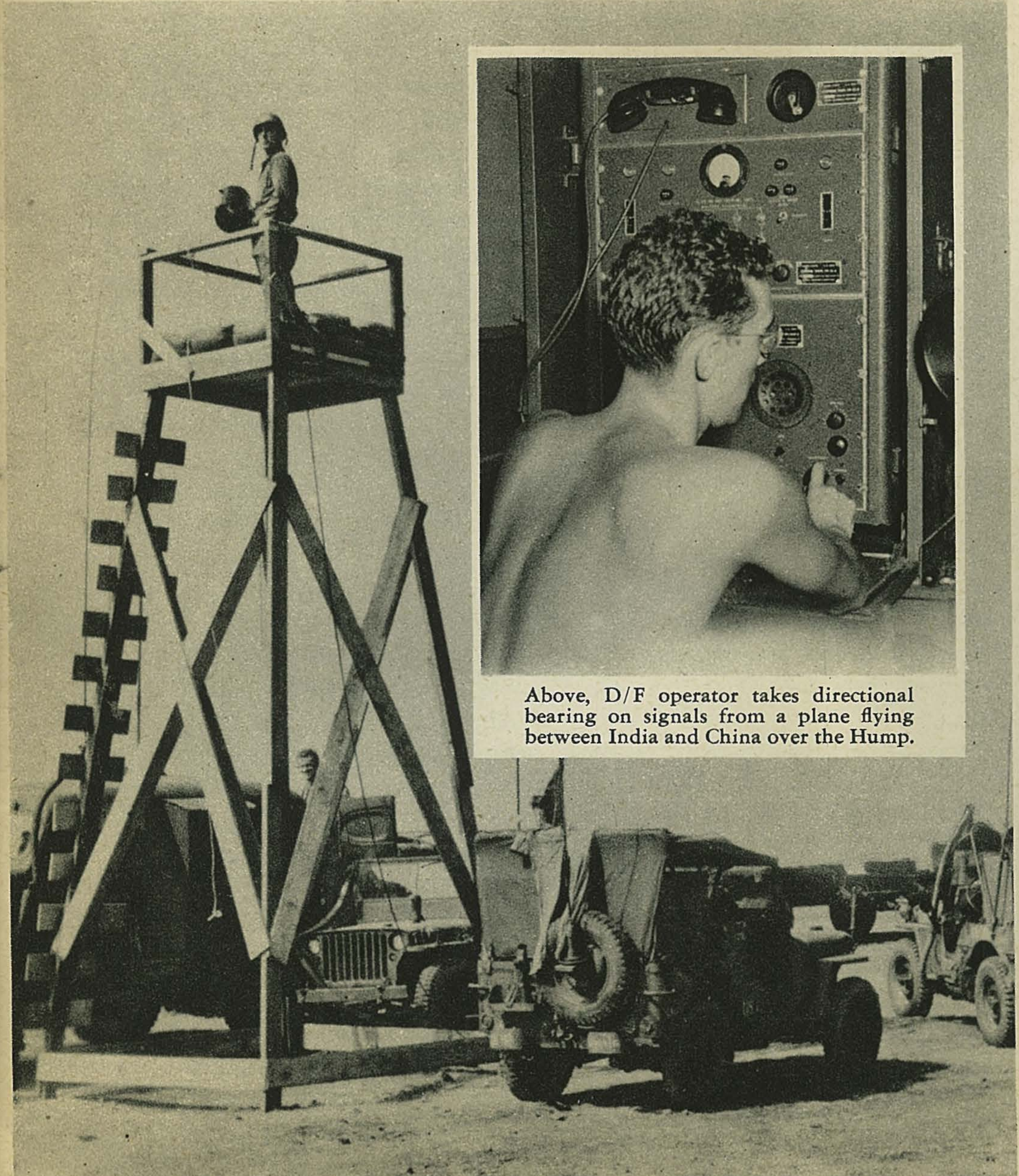
Typical control tower at U.E. Army Air Base.

With the ever-increasing array of air power that is now converging on Japan,



Above, operators answer a plane's query, "Where am I?" by plotting on a board the bearing obtained by several different stations in the D/F net. A position fix can be gotten in four or five minutes. Below, the first tower erected at Iwo Jima, built by SeaBees under enemy shelling.

Pictures on this page are from official AAF photos



Above, D/F operator takes directional bearing on signals from a plane flying between India and China over the Hump.

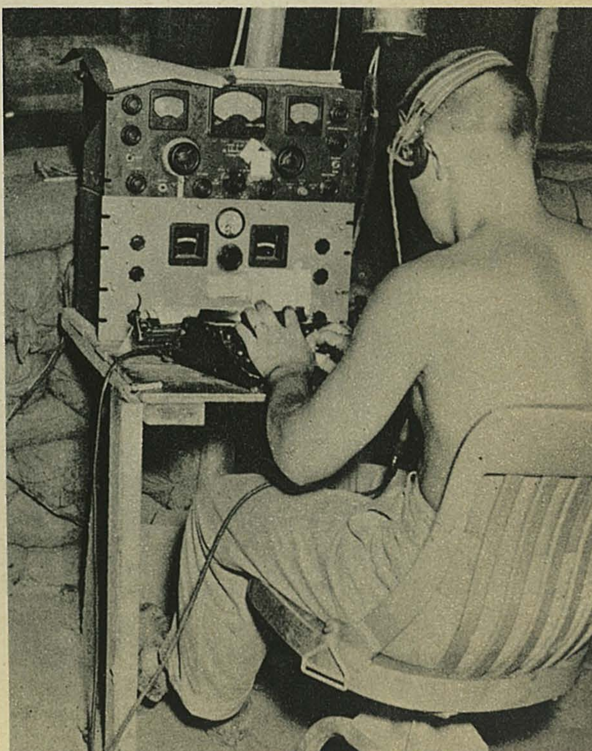
the AACS men in the Pacific will find themselves deluged with air traffic. The air routes will be extended. New control towers will go up as the AAF and the Navy stretch northward. Ground stations will be in contact with many more planes than ever before. Literally millions of operational messages will have to be flashed from base to base, advising a station that a plane is coming or that one has landed.

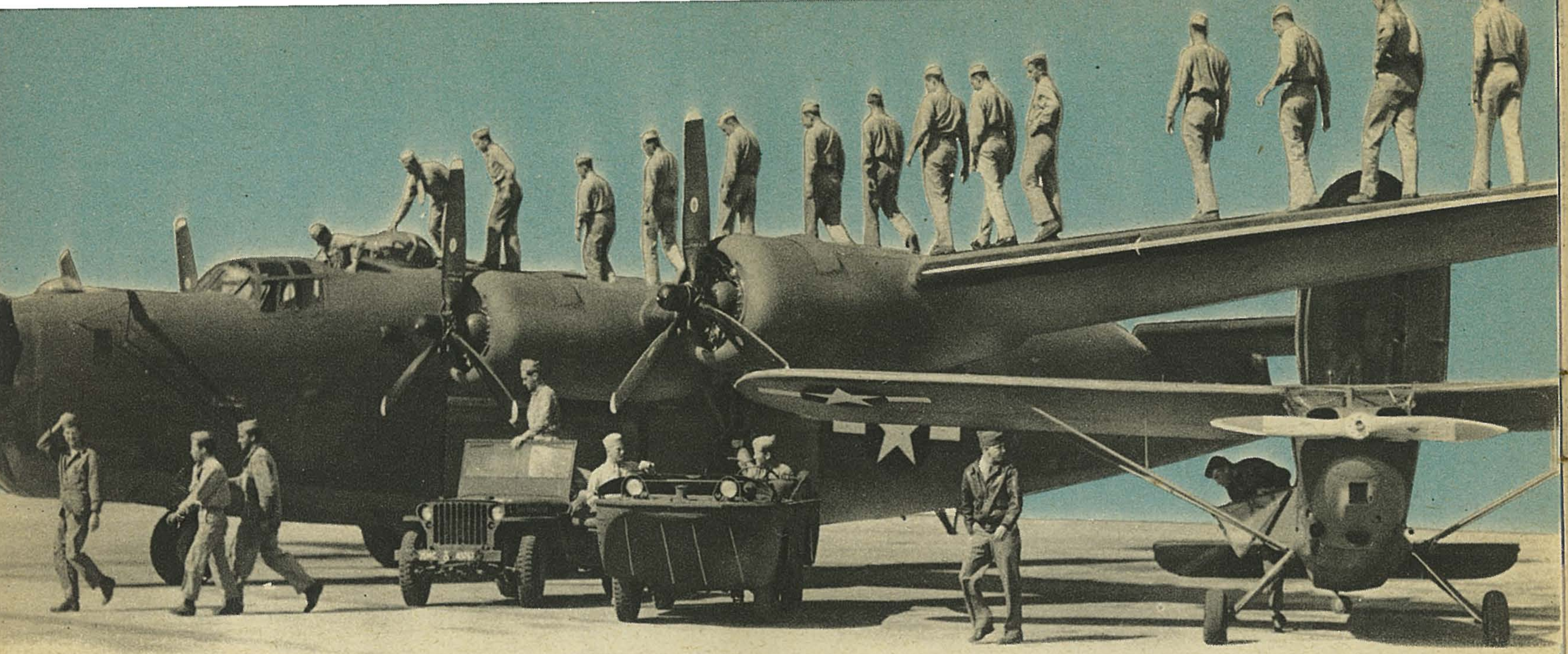
As the tempo of air bombardment of Japan is stepped up, the direction-finding men will assist more planes back to base, the control tower men will issue instructions by the second, and ground station operators will be in constant contact with their counterparts in the air.

All this means that business for planes like "Bucket of Bolts" is picking up. They will have many more navigational facilities to check, many more stations to cover. The 7th AACS Wing ranges from Honolulu to Okinawa, making all stops in between; and its men, specialists all of them, are ready to provide the utmost in flying safety through communications.

The men of AACS fight a special kind of war. Some of them dodge mortar fire with Marines, some sit 14,000 miles from the nearest battlefront, many are just "Mister-In-Between". World Headquarters of AACS —formerly at Bolling Field in Washington — are now at Asheville, North Carolina, where the operational, personnel, maintenance and supply operations of the whole system are concentrated under Brigadier General Ivan L. Farman, who commands this global nerve system of the AAF.

Below: A foxhole installation, during invasion.





TILL THE BOYS COME HOME

by Fred B. Barton

YOU'RE sitting in the NCO club at an airbase named Snetterton Heath, England. It is part of Lord Albemarle's hunting preserve, if you care to know. King George V used to hunt here. About you is the English countryside.

These bomber bases—there are dozens around here, one an average of every 9 miles—are set up in old schools and golf courses and potato fields. The layouts are so camouflaged with their yellowish-green paint, the buildings so squat and so dispersed, everything is so utterly casual and unimportant that, even with censorship restrictions removed, you can't make an exciting picture.

These lads around you in flying jumpers are aerial gunners, members of combat crews. That stuff in the white pitcher is British mild-and-bitter. It doesn't foam—it tastes like something from a discontented brewery. There'll be buns and toasted cheese at 21.30, so wait around. Look at the murals: not as nude as you'd expect. Place of honor goes to a triple panel of stenciled bombs and dates, recording bombing missions, painted on the wall around the unused fireplace.

You find these GIs human, friendly, cordial—and trained in the British school of understatement. Profane they are. A lad with feather-down on his chin uses words a mule-skinner would blush at, uses them naturally. "Doesn't mean a thing," said feather-down. "Do you think when I go home I'll say to my mother 'Pass the blanking butter?' My father would break me in two."

A staff sergeant with enough Hershey bars on his right sleeve, each for six months' service, to start a piano keyboard tells of a trip he made to Linz, Austria, to pick up a plane-load of Kriegies — Americans who were German war-prisoners. He found himself giving them his cigarettes and candy-bars and anything else he had brought along for himself, so needy and appreciative were they.

The sergeant with the flak crease along his right cheek tells you about his own battle injuries, and how the medics back in the States will perform that final plastic surgery job on him when the time comes for his discharge. Meanwhile, he can eat, can't he? Nothing to worry about except a few good looks, and they don't help your night's sleep any.

The lad from Brooklyn tells you without apology that he doesn't care for flying except when it helps win the war. "I put in my combat missions, or as many as fitted in before the war stopped," he says. "I never complained then. But right now I have to put in four flying hours a month to get my extra pay, and I tell you I do begrudge those four flying hours. I'm sick of the air."

Look around the group. You miss a few faces, if you ever visited this B-24 base before. That noisy, cheery lad from New England, whose outspoken ambition was to go back home and be elected sheriff of Woonsocket, got shot down over Hanover. That chap from St. Paul with the artist's genius burning within him like a fire is God knows where. That frightened little lad who was sole survivor of a crew of ten and felt the finger of death upon him when we drank beer together at his base in December 1943 — what happened to him? These men helped pave a road of safety that you and I will travel whenever we fly hereafter from London to Marrakech and Casablanca, or take ship from Southampton to New York, or go anywhere in this saddened but Hitler-free world.

THESE fellows in the Air Forces have had plenty to do while waiting for what's called Re-deployment. For instance, they have been conducting Cook's tours over Germany, to show the rest of the Army how victory looks from the air.

For two years thousands of GIs had been flying a monkey-wrench or a mimeograph or a sentry-post. But finally the MPs, the bedpan commandos in hospitals, the cooks, and airplane mechanics came in for their reward.

"We've flown Congressmen, Members of Parliament and newspapermen over

Germany," said the brass hats. "But we don't really know anyone we love as much as we love you fellows. Now it's your turn."

Stripped of their bombs and waist-guns and with extra K-rations aboard, the heavy bombers were loaded up with ground crews and took off. For some of these landsmen it was their first, or nearly their first, air trip. For all of them except the skeleton crew of four or five (pilot, co-pilot, navigator, radioman, and engineer) it was their first trip over ex-enemy targets.

I went along on one of these educational tours to learn how they were run. The projected itinerary was spelled out for us on a mimeographed map handed to each GI passenger as he boarded the plane. Our Liberator flew our crew of uniformed sightseers over Essen with its ruined Krupp works, over Munster's shattered marshalling yards, over the bombed Dortmund-Ems Canal, then on to Hanover with its rubber factory now in ruins, its gun factory and tank works as flat as Hitler's grave.

Kassel, Frankfurt, Koblenz, Cologne—spelled Köln by the Heinies—passed below us in review as our plane floated along at heights from 200 to 2,000 feet and tried its best to explore exciting targets for eye and camera.

"See that bridge with the tall stone towers?" shouted a non-com from Texas. "That's Remagen. Remember how the Yanks sneaked across there without warning and made their crossing of the Rhine weeks ahead of schedule?" You couldn't miss that bridge.

"Golly," said a thoughtful sergeant from Vermont. "It just came over me that we have seen only two railroad trains all day. Life in this huge country of Germany is completely paralyzed." This Vermonter had sweated out two years in the control-tower of a heavy bombardment base, had seen combat-wounded planes limp home and blow up in emergency landings, had seen planes take off and never return. He had known death, but now for the first time he saw what war really meant, and he was awed.

It was a long, hard, tiring journey: 9 to 10 hours. It struck us as the world's most stupendous show—one which had cost billions to stage—billions of dollars, and incalculable human misery. None of us had ever seen a destroyed nation before. And of course there has been no such destruction in the whole time of written history.

Some of the passengers were fascinated. All were impressed. And some, let it be stated truthfully, were airsick. Maybe it was due to flying low over cities with hollow walls and uncertain air currents, and the weather was not Hollywood stuff, either, for those making their first trip up. Said one groundsman with determination, "This flying, you can have it."

And the pilots and navigators and GI engineers grinned back cheerfully: "This is nothing. Y'ought to fly 8 hours on oxygen, with icicles hanging from the relief-tube."

Back over drab, colorless Germany with its monotony of slate roofs they flew us, and then over Holland, colorful with its dykes and windmills and roofs of red tile. It made a ghastly, impressive, memorable experience for these men, who with typewriters and oil-cans and stew-kettles and all the other sundry equipment that goes to make up a fighting unit had helped fight America's air war. This Cook's Tour was their billion dollar reward.

These tours were so universally popular that it pains me to report they have now been discontinued. A while ago an 8th Air Force public relations officer told me, "We've flown 37 per cent of our personnel over Germany already and we mean to make it 100 per cent."

It was only a dream. And why have these sightseeing rides, these trolley runs, been stopped? Simply because they proved unsafe. Too many pilots got gay, swooping low to buzz a bombed city, flying incautiously between cliffs overhanging the Rhine. Men just ready for a furlough home or a discharge on points were killed in peaceful flying, the victims of a show-off pilot.

"Aerial hara-kiri," growled many an executive officer as he read the report of these one-way trips.

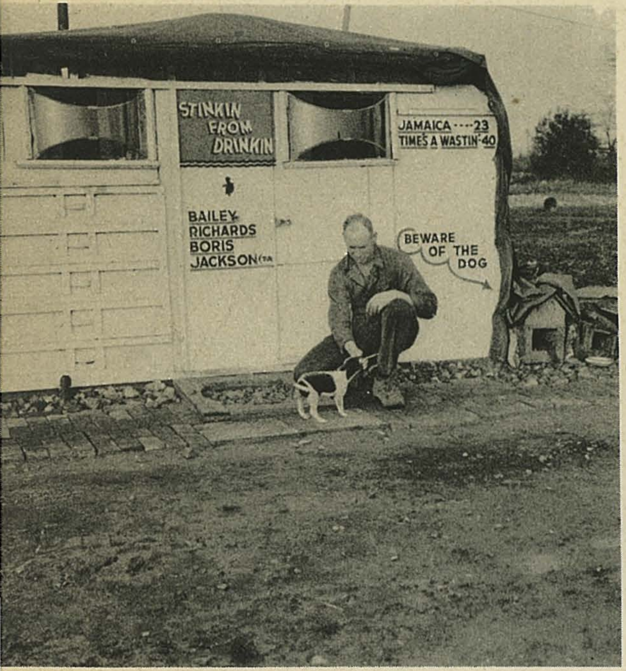
You can't discipline a pilot who has committed suicide and taken a crew and 15 passengers to heaven with him. But the 8th Air Force acted promptly to discourage future buzzing—i.e., swooping low to wave at, flirt with or signal to somebody on the ground. A couple of Saturdays ago a captain buzzed a rest home—a rest camp for combat-weary flyers. Fine: $1,200 and a summary court-martial record against him for all time. A lieutenant buzzed an airfield. Fine: $700. A major got a little gay with government property. For him: $2,400 fine as a souvenir of his childish ways.

"Got to convince these flyers they can't act careless with their passengers' lives and a quarter-million dollar plane," say the air chiefs. They are right. Risk your life in war, if you must; trade life-for-life with the enemy when it pays; but don't kill yourself and wreck your plane by showing off. Kid stuff it is, certainly. How persuade such pilots to grow up?

Too bad that the lesson has to be taught at the expense of ground crews who had counted on their own Cook's Tour and now presumably won't get it. It remains that the

Liberators arriving at Bradley Field, Connecticut, with officers and men being redeployed from Europe. The group in the foreground is waiting to go through Customs as another plane lands.
INS Photo

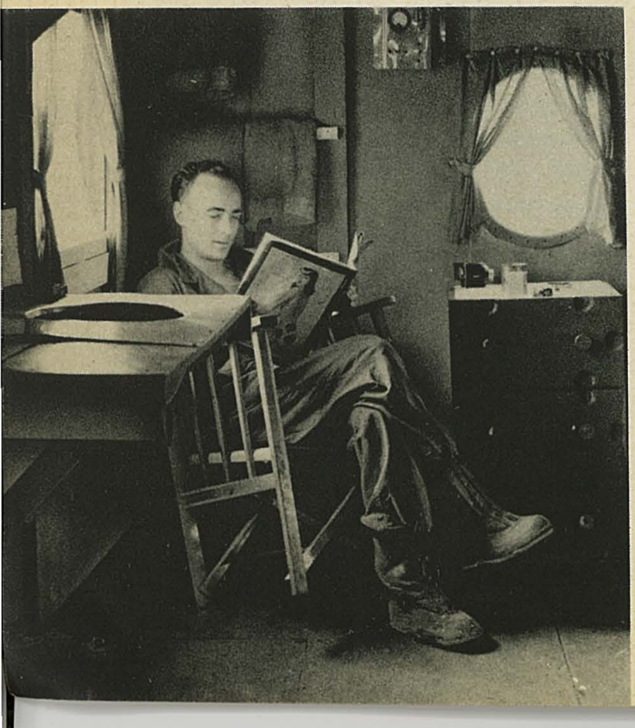
Ground crews still in the European theatre enjoy comfortable quarters while they wait.


STINKIN FROM DRINKIN
JAMAICA ----23 TIMES A WASTIN'-40
BAILEY RICHARDS BORIS JACKSON
BEWARE OF THE DOG

Here is one of the "private" shacks built by a Sergeant from discarded waste materials.

• • •

This hut has plexi-glass windows, wash basin, and a chest made of ammunition boxes.



concept behind these tours seems to me one of the finest pieces of educational work that our Air Forces have hit on yet.

How about the cost of these Cook's Tours?

Major B. E. "Shorty" Fulton of Akron, Ohio, himself an airman and more recently a Kriegie, says, "These men have to put in their flying time. So we just charge these trolley runs up to training. It is a tremendous morale builder." He thought a minute, then added: "I wish we could fly every man, woman and child in Germany over their bombed-out country. It would teach them a lesson."

HERE in England and throughout France, Belgium and the Continent the 8th, 9th and 15th Air Forces and the fighter groups have been re-appraising their losses. On the unfinished pages labeled "Regensburg Mission," "Mission over Hanover" and dozens of others, entry after entry read: "10 of our bombers are missing," "15 of our bombers are missing, 150 men unaccounted for." And so on.

But fate has been kind. Corrections can now be written in, in the form of real-life Kriegies reporting back from the German prison camps.

Heavy bombers of the 8th Air Force have flown thousands of war prisoners, our own as well as French and British, out of Austria and Germany toward home. You rejoice that these bombers are so roomy and so safe and dependable.

Talking to the Kriegies gives you new ideas on the war.

A Lib navigator fresh out of a Stalag tells me, "These Russians are not a bad lot. Tough and disciplined, of course. If a Russian officer has occasion to kill an enlisted man, he can do so and merely make out a report. We aren't used to that. They like Americans. Maybe it is the generosity of our lend-lease. Maybe it is the way we fight."

And meanwhile, talking with infantrymen on leave in London you get a new insight into the never-changing German psychology: the gimme-all and get-back-nothing technique of life. Says an infantry captain: "These Germans are an incredible lot. They start screaming before they get hurt. They insist they are being abused. In cities that have been bombed they are fairly human and respectful; easy to deal with. In cities that haven't been touched, like Heidelberg, they are still so arrogant that you practically have to ask their permission to walk on their sidewalk."

Men in the 8th Air Force have no illusions about the job of supervising Germany. You can sign up for either the occupational air force or the Pacific, if you belong to this bomber outfit—the 96th heavy bomb group, this happens to be.

Maybe you think the majority of the pilots and aerial gunners and the rest are asking for Germany, which is comparatively quiet and safe. You're wrong.

"Once you get the thrill of combat in your veins you don't want a quiet job," a staff sergeant who is waist-gunner on a heavy bomber explained to me over a rare glass of bottled lager.

Of course, they'd like to go home first, home on leave. But a lot of them aren't counting on that.

It may be flippantly out of place to include here a statement from a native Briton, but the censor permits it, and so I dare the Mrs. Grundys. Three Limeys came into the guest quarters of this airbase this morning while I was typing. We exchanged a few remarks. I mentioned, "the Yanks will soon be moving out."

"But not all of you," said one of the painters cheerfully. "There'll be a lot of young Yanks coming along, for a long time to come." He made a gesture indicating steps, as of growing children.

He went on: "England is the great melting-pot now. Czechs, Poles, Canadians, Americans, and every other race, have left their mark. White *and* black." He thought a moment. "A good thing, too, probably. England was growing kind of stale"—he pronounced it "style." "Now we've got all this new blood over here. It ought to do us good."

Not all sociologists are so cheerful, so content with what they find. I hope, as you too would hope if you were here to observe and to listen, that the final results of having outfits such as America's 8th Air Force stationed here in UK all these long years will be favorable. Adding new blood to England's stock was not one of the purposes of the war, but it is a real result. May all our other acts, and the uncalculated events that send results rippling until the end of time, prove likewise wholesome and beneficial.

GAS FOR CHINA

By Lieutenant Rus Walton

AAF Photo

Above, a Liberator flies the treacherous Hump with its load of gas. Now we have a pipe-line to help do this carrying job—it was completed last June 7 from Burma into Kumming, and carries about a quarter of the oil and gas being shipped into China. The rest is still carried by plane.

THIS will be another routine mission over the Hump, be one of the many flown everyday; its successful completion is taken for granted.

There will be no briefing by intelligence; each pilot knows — from experience — all there is to know about the route. There will be no fighter protection; each unarmed C-109 tanker-transport is expected to accept its odds on the chances of interception. There will be no rest, no relief until the eighteen or more hours of flying are completed.

It is two o'clock in the morning. Silently the rain drips from the eaves of the straw roof, settles in fog. A cup of coffee at the mess hall, then you make the fast ride to the operations building for the clearance and necessary papers. Maps . . . radio frequencies . . . reports on enemy action . . . weather . . . parachutes . . . gun . . . furlined jacket . . .

The ship is ready to go; the liquid cargo is already in the great tanks, weighting her down until the nose wheel almost rubs against the wheel-well, and the tail skid comes close to dragging the ground. Hauling gasoline seems like an inglorious task. But those thousands of gallons of high octane fuel will fill the tanks of some fighter plane or bomber on its missions against the Japanese. It is a heavy load; the plane will strain on the take-off.

Rain beats steadily against the glass. Radio reception is bad tonight, and the wind is blowing in strong gusts across the runway. The tension starts even as the engines are run up for their pre-flight test. Number four spits, sputters and then holds. Probably some rain-water in the carburetor.

"694 . . . cleared to take off." Slowly the plane swings out onto the runway and lines up with the lights. Now it's up to the crew. These boys seem young for all this responsibility, but they have proved themselves many times before.

The runway is more than a mile long; in this fog and rain only a hundred yards of it are visible. The engines surge, the ship jolts and begins to move. Tires squeegee over the wet surface, landing lights poke into the haze and the wind grasps at the wings. Above the roar of the four supercharged engines and the propellers, the co-pilot reads the airspeed aloud. "Sixty . . . seventy . . . eighty . . . ninety . . . ninety-five." Slowly, hesitating at first, the nose wheel leaves the ground and then the main gears follow, skip once or twice lightly before drawing themselves outward into their wells. The landing lights fold back into the wings and the fog closes in against the cockpit.

Everything inside is in complete darkness except for the soft bluish glow of the fluorescent lights and the amber reflection from the radio operator's desk lamp. It must be so to afford the pilots maximum visibility. Maps are seldom referred to, radio facilities are memorized to keep use of flashlights to a minimum.

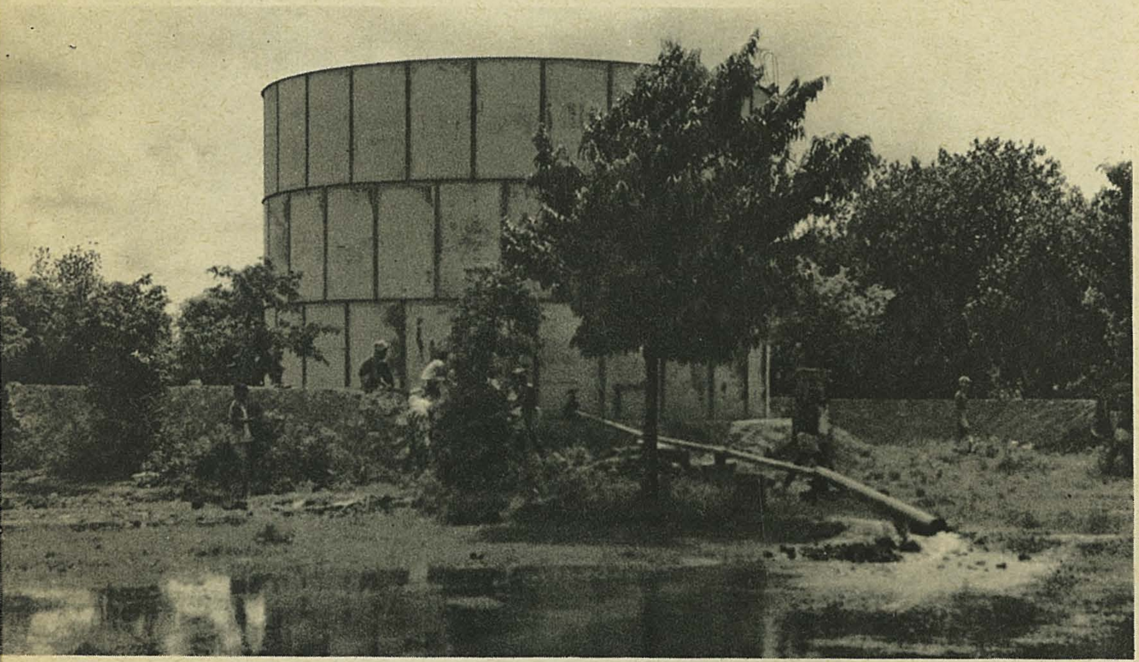
Most of the flying is done on instruments. The crew chief has cracked the bomb bay doors, to prevent any accumulation of gas vapors which might cause an explosion when ignited by a spark from the radio sets. If that happened, goodbye.

As you watch the pilots and the glow of light on their instrument dial, you become hypnotized and drowsy. You look away to break the trance. The pilots have a trade secret. Always alert, watching every flicker, every deviation of the dials, their eyes are constantly roaming, never concentrating too long on any one instrument. This is important.

The first stop is made to take on gas and oil before jumping across the Hump. Planes start with full tanks to leave the greatest possible off-load in China, where it will do the most good. After a quick check on the weather and another cup of hot coffee, you're back in the cockpit. This next hop is the thousand-mile hop across the Hump.

Flying the Hump from India to China takes you over three ranges. First the foot hills, nine to ten thousand feet high. Then the Himalaya mountains, fourteen to twenty-three thousand feet high, with one or two peaks going on up to almost thirty thousand. Then some smaller mountains, at the China end of the run, which are fairly dangerous because of the inaccessible territories they embrace. The entire region is a boiling pot for weather. The route is studded with wrecked planes that didn't quite make it.

Dawn has not quite arrived as we take off and head east. On the first leg of the trip the plane levelled off at five thousand feet. Now we climb higher and higher. The pounding of the engines decreases to a steady hum. The altimeter reads seventeen thousand, five hundred feet. Sometime ago, back at ten thousand feet, you had put on the oxygen mask. It is cold up here, twenty below zero Centigrade.



AAF Photo

A 5000-barrel storage tank at a B-24 base in India. The pipe in the foreground is draining the tank of water that has been used to test the gas line. Gas is pumped from tank to planes.

Through the windows there is nothing but a grayness which envelopes the world, presses against the wings, bears down on the plane. The leading edge of the wings begins to take on a coating of white beads. Gradually the beads build up into a uniform covering, one on top of the other, as when you sprinkle sugar on your cereal. Rime ice.

The crew chief points to the engines. On each propeller hub there is a long spindle of ice. Like the icicles on the rain spout back home, only much longer and bigger, sticking out vertically instead of hanging down. You notice the antenna; the wire is coated with a sheath of ice more than an inch in diameter. The windows become opaque.

The rubber de-icer boots which might remove the ice from the wings and the tail surfaces have been removed to lighten the plane and increase the airspeed. It's just one of those things. On these trips you fly until the ice gets so bad you can't fly any more . . . then jettison what tanks you can. If that doesn't help, there's always a parachute.

The oxygen mask cuts into the bridge of your nose and you swear at it; after three hours of this nagging pressure you know you will go crazy if you can't take the damned thing off . . . but you don't dare.

Finally the plane breaks into the clear-brilliant blue sky, pure in the sunlight. Down below the clouds bubble and foam. Off to the left are some peaks rising higher than the altitude of our plane. What if the ship had been off course? These boys are pretty sharp on their navigation.

Ahead, the bright glare of the sun through the windshield makes it impossible to look out. The sunlight feels good—until you realize that it would be easy for a Jap fighter to come zooming out of that dazzling light without any warning. Then you begin to wish you were back on instruments.

Four and a half hours now. Your feet are numbed with cold, even in fur-lined boots. You're dying for a cigarette but a load of aviation gas burns sort of easily—it's not worth the chance. Gradually the floor of clouds disappears to reveal the green hills of China. Flat tops of the mountains run along and then drop into nothing until they reach the waters of rushing streams thousands of feet below. Yet on top of each hill, high in the air, is a farm, a farm-house and people. The soil is cultivated, worked into terraces; rice grows.

Occasionally a village springs up in a valley. From this high altitude all the lakes are deep blue-green, all the rivers froth with foaming rapids.

The radio operator hands the latest terminal weather to the pilot. It's not too good. Three hundred foot ceiling, one mile visibility with rain and fog. Once more the plane plows into the clouds, once more the ice builds up on the wings. Then the whine of the engines increases as the props are pushed forward. A series of thuds, and the wheels drop into place. Nothing but fog around—but you know you are descending because your ears begin to plug and pop. Down to four thousand feet.

Three thousand feet . . . we're riding the leg of a beam now. The elevation of the field is about two thousand; it sits in the midst of some hills like a penny in the middle of a saucer. Losing five hundred feet a minute, coming closer to the field, closer to the mountains. At just the right second the big four-engined Liberator bomber turns, shuttling back and forth on the radio range. Will these clouds ever break?

The wisps of cumulus drift away from the plane as the ground appears and dead ahead lies a hint of the runway swathed in fog and rain.

With a little jar the big bird squats on the dirt and bounces along through the mud filled ruts. Coolies in blue quilted short-coats and straw hats the size of meat platters crowd around the plane; shivering GIs start the pumps to drain the gas from the tanks, tend to the cargo manifests and ship papers. You traipse with the crew to the mess hall. It's only a canvas tent with some plain wooden tables and stools. But the hot coffee, the plate of eggs and chips, and that cigarette—at last—are wonderful.

Just as you begin to thaw out and relax, the pilot gets up, and you know you'll be going back across in a few minutes.

The empty ship leaves the runway quickly and climbs up through the overcast of clouds with grace and speed that excites. This time the pilots climb to twenty thousand feet, top all the weather, and with a good tail wind the unloaded plane speeds over the terrain, soon passing by the three high peaks which are about the half-way mark.

It wouldn't be natural to be without any worries: this time you're sweating out the gas. To leave the maximum amount of fuel in China, planes drain off as much gas as possible.

By leaning out the fuel mixture as much as possible and throttling back on the engines to start their descent at the earliest possible moment, the pilots eke out enough gas to get into the valley and land at a field. When the crew chief checks the gas before refueling he looks down and says, "Aw, hell. We got gas left over." Probably enough for fifteen or twenty more minutes of flight, at greatly reduced power . . . and he says, "Aw, hell."

Sunlight is fading fast as the floor of the valley slips beneath the plane on the last leg of the flight. Now it's the co-pilot's turn to fly while the first pilot leans back in his adjustable seat to write a letter home.

Day turns to night. The many-veined rivers which flood the heart of the valley are like a series of trickles of quicksilver on a black velvet back-drop. Moonlight casts its reflection in the waters. Lights from houses and small bonfires flit like fireflies, and now and then a river boat shines its pilot light against the shores. At different altitudes the red and green navigation lights of other planes pass, just starting out on another Hump mission.

At the end of the flight we land on the home field with just one skip of the wheel. In another day the crew will be back doing the same thing again—taking their chances, beating the weather, the Japs and the engines.

They love their buddies, their planes; but they hate their jobs. They're tired and they're homesick, ready to go home when they can. There isn't one of them who wouldn't trade his Distinguished Flying Cross (with cluster) and his Air Medal (with clusters) for the touch of his wife's hand, a smile from his mother's face . . . and the smell of a good old, genuine Kansas City T-bone steak.

WHAT A PILOT FEELS

By Captain Thomas A. Reiner

Flight, even if under wartime conditions, can be a transcendent experience to a man who loves his plane.

If you are not a pilot, you might not understand. Then it is not your hand that advances the throttles, it isn't your strength that lifts the plane from the ground, makes it a clean, powerful, free being. And last, it isn't you who transforms an inanimate mass of steel into a throbbing, roaring giant—yet a slave to your whim.

The thrill in flying is in your knowledge that you are controlling a force greater than yourself. And what being able to control that force can do for you.

I could talk forever on the varied thrills that I feel when flying.

At midnight on a moonlight night when the world takes a new gown—suddenly I feel awed and closer to God than I have ever been before.

To climb through a solid overcast into the brilliant sun, leaving the rest of the world in a dark and gloomy cave—

To battle the elements in a howling thunderstorm, using my skill and strength and winning—

To make a perfect landing, so smooth that even a glass of water won't ripple—

That is something to make a man happy for months. Then a passion within you is aroused. As I wheel and soar, dive, roll and climb, every action of the plane is me—my desire and my will. And suddenly a strength greater than myself is within me. My heart seems about to overflow—my stomach muscles tighten—I can't talk, so I open my throat and scream for joy—holler until I can hear myself over the roar of the motors—to dissipate that strength of excitement of joy. Maybe I'm a little crazy—I don't care.

To be off the ground at the dawn, while the rest of the world sleeps; to climb and look down on the world; to fly over so many towns and places—wondering about each person and place—gives me a thrill.

I can't continue. I have 2,000 hours in the air, and each minute gave me a new and different thought with a thrill. In case I haven't mentioned it—I like to fly.

There is always something to be considered—always a question mark that rides with you. And when I step from a twisted mass that was once a plane and realize how close death was, it only makes me realize how wonderful it is to be alive.

I have flown many places, and each one was very interesting. All over the U. S., and a bit of Mexico. Then South America—mountains, water, jungles. And Ascension Island—finding it in the middle of an ocean. Then Africa—more jungles, deserts and mountains. Many strange lands and strange peoples. England, that cameo of an isle. France and Germany, which have given me something I shall never lose—a realization of just how wonderful America really is. Brussels, Paris, London, Aachen, Cologne, Frankfurt, the Rhine. Interesting? Yes! More than that—staggering.

(The effort expended toward destruction in this war has been beyond all imagination. If only this magnificent strength had been directed toward peaceful pursuits, what great things might have been created, instead of the great things that have been destroyed.)

I must admit that at times flying is work—hard work with nothing pleasant in the offing. But those moments only help heighten the thrills and pleasure the Air Forces and the people in it have given to me.

AIRMEN TAKEN

THE GERMANS TOLD US

by Lieutenant A. T. Waddingham, A. C.

THE Germans knew a lot about us.

After the 7th Army had liberated our POW camp on April 29, 1945—I had been a prisoner for 13 months—I walked into the prison camp office and searched for the card I knew must be there. It carried my name, picture and some amazing information about me: Height, weight, build, face (round), scars (none).

The information was written in a firm hand, without indecision, as if copying from notes.

Where had the Nazis obtained that information as to my height and weight? They never examined me.

Another Lieutenant in our camp, a bombardier who got shot down, was being questioned by the interrogator. Where was he shot down — what kind of bombs was he carrying—and so on? Stubbornly, he refused to give any information beyond his name, rank and serial number.

He, too, got his card back later by the simple process of walking into the deserted prison office and helping himself. Then he asked a young German lad, the camp interpreter, to translate it for him. The interpreter came to a line: "Identifying marks: Scar on right knee."

"But I have no scar on my right knee," objected the bombardier.

Then he thought a minute, reached down, and pulled up his trousers leg. The scar was there: a forgotten relic of boyhood, long forgotten. He, too, had not been examined by the Germans, yet they knew about that scar. How?

At no time during my imprisonment did the Germans put pressure on me to reveal any military information they might have thought I had. Indeed, it was the reverse. "We don't need to *ask* you. We will *tell* you," they said brazenly. Then they proved it.

They opened a big book. It had pictures of individuals such as our American group commanders and squadron commanders. They could tell us, and did tell us, about our entire training: where we went to flying school, when we came overseas, how many missions we had gone on. It was amazing.

They kept up-to-date with their information. One day they said, "Your squadron commander, Johnson, generally flew in the leading plane. But we shot down that plane, and he wasn't in it. Where was he?"

Don't ask me how they got this accurate and up-to-the-minute information. I don't know.

I heard over a radio program that 70 per cent of all American POWs in Germany were airmen. I can well believe it. Sooner or later they got most of us, or so it seemed.

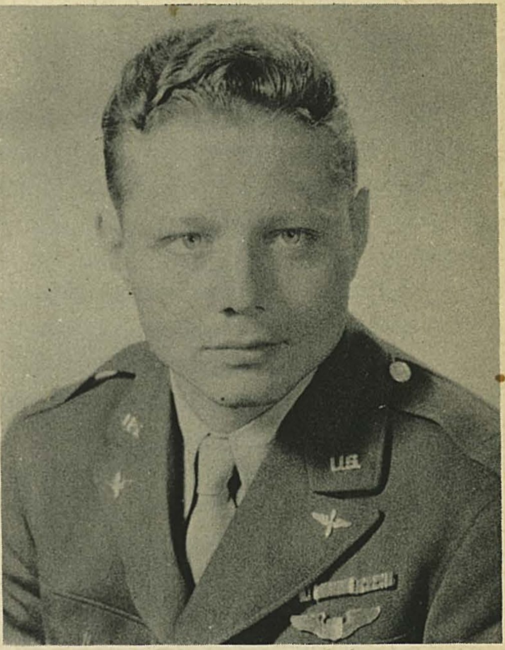
I got shot down on my 7th mission—but got credit for 13 missions altogether, because if we went above the 47th parallel, into the heavy-flak area, that counted double. The 47th parallel ran through Grotz, Vienna, Starr, Weiner-Neustadt and Regensburg.

APRIL 13, 1944, is a day I shall long remember. Our left-waist gunner had been killed. Our camera man had been killed—he was a new man and this was his first trip. But our Lib was doing all right for itself till flames broke out in the cabin. Then it was only a question of which way you jump, not if or when.

I jumped back and dove backward into the bomb bay. My skull hit on the steel catwalk. I lay there, almost knocked out. Then the plane twisted somehow and I fell out. One sturdy rip and the chute opened.

I fell in a little group. I was surprised. Then I saw they were not very friendly. They were shouting "Budapesth, Budapesth." I reached up, and that was when I collided with a lead pellet that wounded my left hand.

That made me mad. I stood up and drew my .45. I felt I had had it, as the saying goes —I was all through. But at least I wanted to sell my life dear. Just then two German Storm Troopers ran in. They pushed the Hungarian farmers aside and broke their muskets over their knees. They "rescued" me.


The author flew with the 15th Air Force.

All of us who were wounded were put in a box-car and taken to a hospital in Budapesth. I can't complain of the treatment they gave me. For three weeks I was given sulfa drugs where I needed them. I had the services of a plastic surgeon.

Six weeks after my capture I was sent on to a POW camp at Sagan, spending six days and nights to get there in a freight-car with 50 other men. The clothes I had flown in were the clothes I lived in as a prisoner for 13 months—first at Sagan, afterwards at Mooseberg, northwest of Munich.

Mine is not the typical horror story of such camps as Dachau, for Nazi political prisoners. The Luftwaffe handled its prisoners of war fairly decently by comparison. I visited Dachau, on my way out of Germany; I saw the 40 flat-cars of starved, dead bodies.

I was riding in a jeep driven by some medical GI. Death was not new to me. I had seen young men killed when they had some chance of fighting back. Death was sort of peaceful. At least it was quick. But Dachau was unspeakable.

I leaned out of the jeep and vomited quietly and thoroughly.

PRISONER

WE AND THEY

by Felice Crainianu

This report by Felice Crainianu, a member of the Rumanian Red Cross, comes to Plane Talk's pages through the courtesy of the War Department Bureau of Public Relations. It tells, in English sometimes a little halting, a story of deep human implication.

THEY were over one thousand very young, slim, unsophisticated boys. Nazi propaganda had tried to represent them to us as ruthless gangsters, savage as convicts liberated from Sing-Sing on condition they would accomplish the most terrorizing raids. It was being whispered that they all had had the lobes of their ears cut out and that they were paid fabulous sums for each bombardment mission.

We who took care of them, and censored their letters, knew that they were just good sons and husbands and in many cases loving fathers, that they worshipped God and that they fought for the freedom of people and the peace of the world.

Sometimes we had to visit them after some heavy air raid. We drove through scenes of desolation, had often just been hearing of the death of people we knew, of the disaster brought to friends or relatives. And our own homes were often wrecked. But still we had to do our duty—the stern duty of the Red Cross that must extend a charitable hand to friend or foe in need of help.

Once we had to approach one of the camps through a place where twenty open coffins were laid on the ground, ready to receive twenty maimed bodies. Men, women and children were silently waiting, dreading the moment when they would be called inside to recognize in one of the corpses the loved one who had been missing from home since the raid. We could not help having rather a severe countenance on our first encounter with those who had brought such sorrow upon our people.

But we were met with such perfect candor that we felt at once that the big, clear-eyed boys confronting us could not have done it on purpose. They, on their part, seemed overcome with grief. They had just been taken to see the ruins; people had shaken their fists at them, they felt the hostility surrounding them; but they knew they had only aimed at military objectives without any cruel purpose. Some of them had their eyes full of tears. We had to comfort instead of scolding them.

AAF Photo

A Sergeant of the 15th Air Force delouses the effects of American airmen who have just been rescued from German prison camps in Rumania.

I said I understood what it must be to aim at an objective from some thousands of feet in the air and the difficulty they must have encountered, when hit by flak, to avoid the populated areas. I cannot forget the lifting of clouds from those young faces. "You see, she at least understands!" exclaimed one of them to his friend.

Our task as Red Cross workers was not easy to fulfil, and we were often subjected to bitter reproach. Why didn't we mind our own business, and find something more patriotic to do than helping the Anglo-Saxon destructors? But after a period of tranquillity, when air raids were forgotten, the same people would ask timidly, with a guilty air: "And how are they looking? What are they thinking of Rumania?"

In the country, where the peasants did not feel so much the consequences of the air raids, the feelings were unmixed, at the beginning at least. To somebody who tried to explain to them that the parachutists they were welcoming were enemies, some peasants replied: "But how should they be our enemies when they are our dear friends the Americans come to help us drive the Germans out of the country?"

This explains why much astonished airmen found themselves hugged and petted by peasants on touching Rumanian soil. Every one offered them the best they had. Colored eggs and cakes for Easter, chicken, cheese, and fruit, all the drinks that could be found in the house. We learned all this from the prisoners' letters. It was the more remarkable because our peasants do not like foreigners as a rule, and because we knew how scarce food can be in certain regions, especially at the beginning of spring.

From the letters we collected mentions of small deeds of kindness done by people in different stations of life which proved the general kind-heartedness the prisoners encountered in our country. I am just quoting from three missives without any commentaries:

"A guard just put a radio beside my ear. They seem to want to do pleasant things for us even if we are enemy aviators."

"The people that caught me and searched in my pocket found the picture of Francis and Winona. They thought it was my wife and baby and I was willing to let them keep thinking that. They put me on a bed before they interrogated me. While I was there, a lady came in with her baby and laid it down in my arms. I guess she thought it would remind me of mine."

"While I was floating down in my parachute, a Rumanian fighter plane circled around me and wagged his wings as if to say 'hello' and 'good luck.' I thought it was pretty decent of him."

The dead were piously buried and many a tear was shed on them. In one village, the mayor engaged paid mourners for the funerals, because he thought it was his duty to insure proper weeping for someone who had died so far from his own people.

In another hamlet the villagers found the body of an Englishman very scarcely clothed, and decided to provide the burial outfit themselves. They dressed him in the most beautiful white peasant clothes they could find amongst them, because it is fit a young man should be buried in white as a bridegroom.

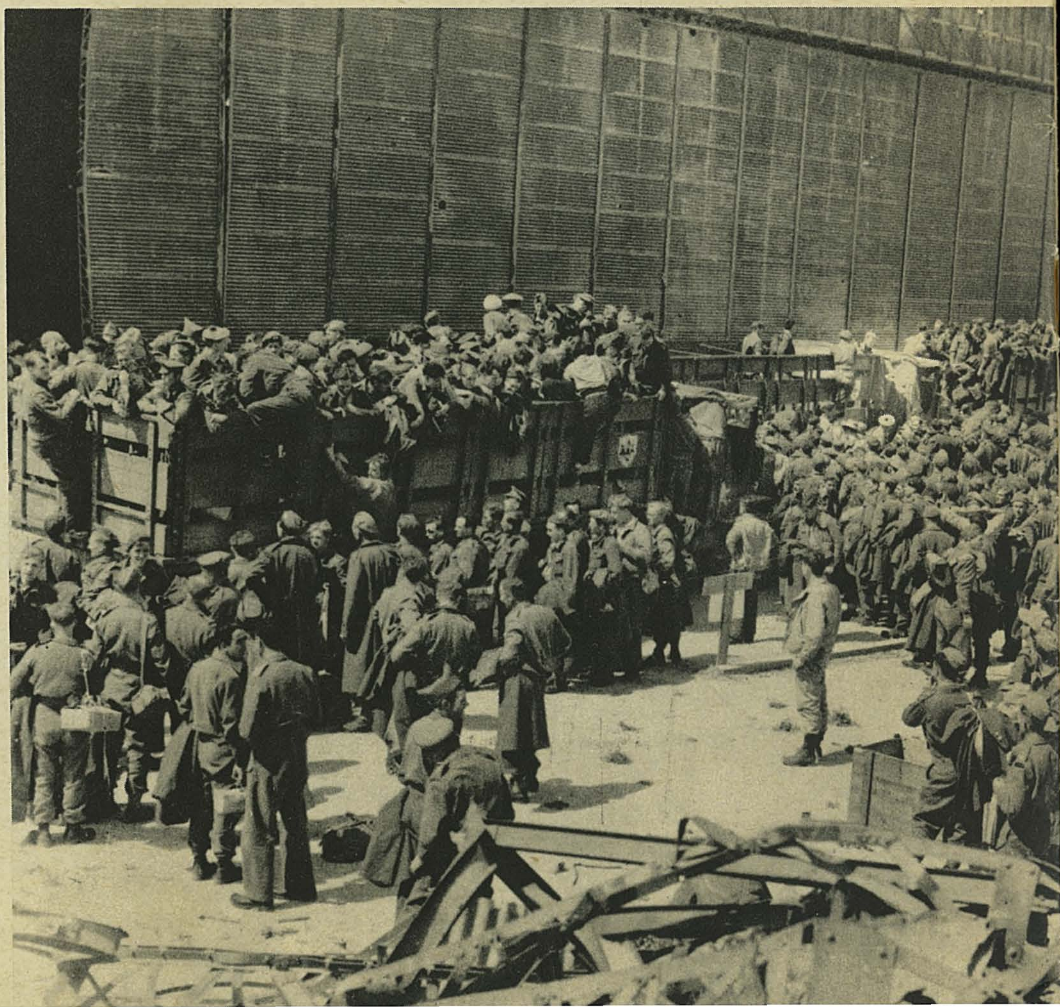
In another place, when a most solemn burial was organized by the local authorities, the priest addressing the assembled youths told them they should keep deep in their hearts the memory of a hero who had come to die in their village, and try to be as brave as he. Everywhere flowers were showered and wax candles lighted on the graves. Everywhere there was a prayer recited, or at least a simple, "May he rest in peace," pronounced from the bottom of the heart.

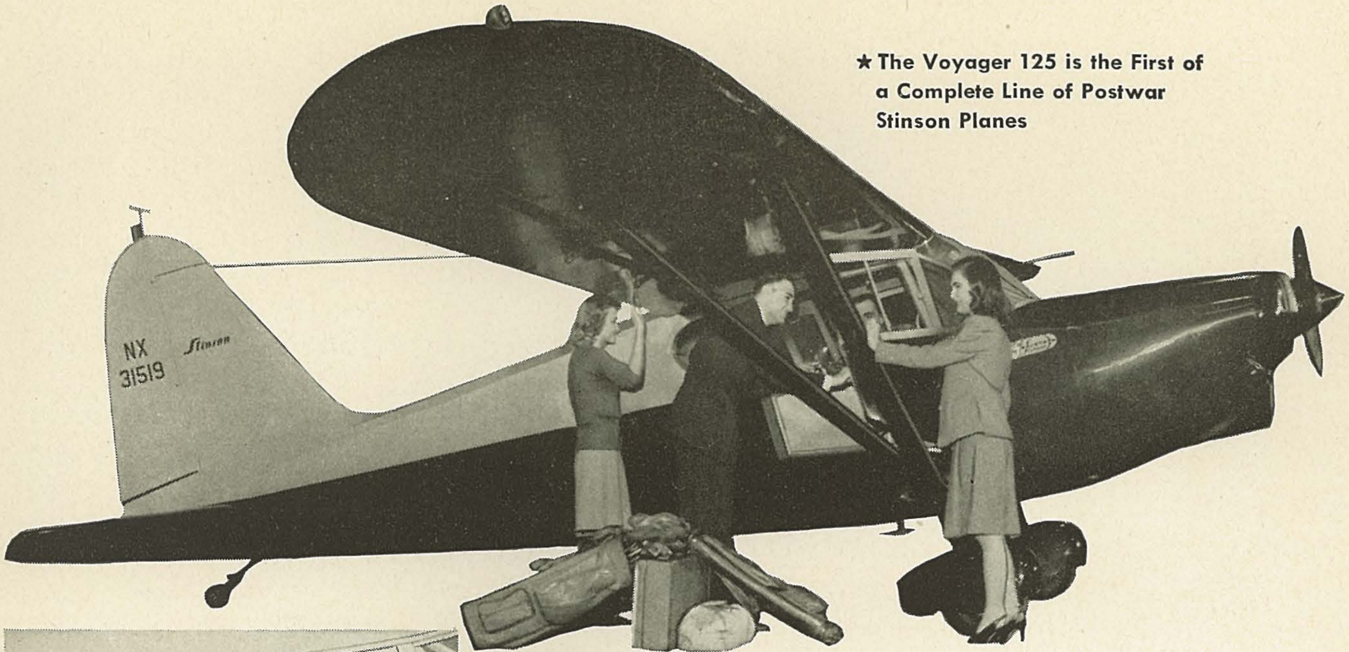
In mentioning all this I have in mind the many sorrowful mothers whose sons did not come back. They should know, if that may lessen their grief, what pious care presided over the freshly dug graves.

And to end this, I would like to emphasize, for the sake of the boys who fretted during months behind the barbed wire fences we had to keep around them, how whole-heartedly we did the small things we were allowed to do for them. They never guessed what a constant fight we had to put up, to keep our right to visit the camps, and what incessant opposition the Germans met in our organization, whenever they tried to take over the survey of the Anglo-American prisoners.

I think it is fair the boys should learn now, when they are free and safely away overseas, that the "little" we did for them, in their opinion, was considered "too much," and often we feared the threat that we ourselves would be put behind barbed wire.

Great fleets of trucks, lately used to pour war material into Germany, have been helping repatriate American prisoners of war. The Americans here, some wearing British uniforms, were some of 50,000 who arrived at Rheims, France, in one week, after being flown from Nazi prisons.





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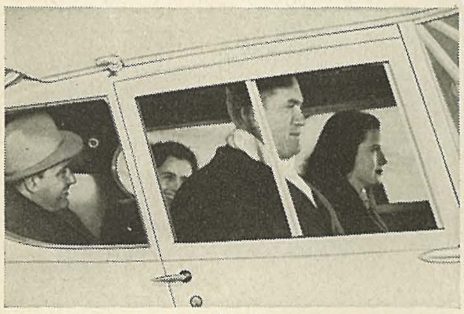

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Reproduced from an official U. S. Navy Kodachrome, this colorful picture shows a Stinson "Flying Jeep" operating from a Naval Aircraft Carrier.